DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 1991

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED FIRST CONGRESS

SECOND SESSION

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Justification of the Budget Estimates

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUDGET JUSTIFICATIONS, F.Y. 1991

March 3, 1849

OFFICE OF THE SECRETARY

NOTICE: These budget justifications are prepared for the Interior and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained through the Office of Budget of the Department of the Interior.

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

Fiscal Year 1991 Budget Justifications

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General Statement

The Department of the Interior was created by an act of Congress on March 3, 1849 to handle the Nation's internal affairs. It has evolved into the Nation's principal agency focusing on conservation and wise use of public lands, with responsibility for most of our nationally owned public lands and natural resources. The Department serves people in all 50 States and has a major responsibility for programs serving Native Americans, Alaska Natives and residents of Island Territories under U.S. administration.

The mission of the Interior Department is to encourage and provide for the preservation, development and management of the natural resources of the United States for the use, enjoyment and security of its people, now and in the future, and to manage properly the trust responsibilities of the United States with respect to Native Americans. The 1991 budget for the Department continues to reflect proposals consistent with the policies of the Administration and the Secretary's Stewardship goals.

The Secretary is requesting appropriations totalling $64,115,000 to provide executive direction, coordinated policy development and oversight of the Department in line with current Administration initiatives and to ensure the efficient management and operation of Departmental activities.

The following table provides a summary of the 1990 programs and the 1991 request:

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Incr. from Base
Appropriations Requested:					
Salaries and Expenses					
$	$51,045	$50,331	$53,690	$62,076	$8,386
(FTE-T)	595	595	591	627	36
Construction Management					
$	1,800	1,800	1,877	2,039	162
(FTE-T)	18	18	18	20	2
Subtotal, Appropriations Requested					
$	$52,845	$52,131	$55,567	$64,115	$8,548
(FTE-T)	613	613	609	647	38

Other:					
Working Capital Fund (FTE-T)	318	318	318	324	6
Reimbursements (FTE-T)	53	53	45	45	0
Total, Office of the Secretary					
$	$52,845	$52,131	$55,567	$64,115	$8,548
(FTE-T)	984	984	972	1,016	44

Highlights of the FY 1991 Request

The changes between the 1990 programs and the 1991 budget are highlighted below by appropriation.

Salaries and Expenses

The Secretary requests an increase of $11,745,000 and 32 workyears from the 1990 adjusted appropriated level to finance executive direction and management of the Department's activities, and to carry out the responsibilities of this Cabinet level office in support of Administration initiatives. The major changes are detailed as follows:

+$3,359,000 for adjustments to the base program primarily for restoration of the effects of P.L. 99-177, office space costs, the Federal Employees Retirement System (FERS) reestimates, administrative and staffing efficiencies, and pay adjustments stemming from full year costs of the January 1990 payraise, part of the proposed 1991 payraise, and an additional paid day in FY 1991;

+$2,800,000 in one-time funding has been included in this account to begin preparations for office moves to Avondale, Maryland;

+$429,000 will provide the necessary support to the Department's Take Pride in America campaign;

+$500,000 and 10 workyears will establish an Office of Quality Assurance that will work to address management problems in the Department, with an emphasis on the Bureau of Indian Affairs;

+$900,000 and 5 workyears are proposed to expand the Office of Environmental Project Review to provide coordination and technical expertise among the various bureaus on the problems of hazardous materials management on Federal lands;

+$200,000 will be used to continue the development and review of Superfund damage assessment regulations;

+$750,000 and 3 workyears will be used to lead Departmentwide efforts to standardize automated systems for personal property and for procurement, and to conduct property management reviews;

+$180,000 and 4 workyears will be applied to help carry out activities associated with three new ethics laws, Executive Order 12674 on ethics, and responsibilities under the Inspector General Act Amendments of 1988;

+$520,000 meets costs associated with the Department's Productivity Enhancement Fund program;

+$400,000 reflects a commitment to significantly increase the focus on implementing the concept of total quality management (TQM) in the Department;

+$500,000 and 2 workyears will strengthen science and environmental activities related to global climate change by coordinating bureau efforts and conducting program analyses;

+$210,000 and 4 workyears will establish a substantive review process of regulations issued by the Department to weigh the costs and benefits of all Departmental proposed rulemakings;

+$250,000 and 1 workyear will be used to strengthen internal management controls by expanding existing capabilities;

+$345,000 is included to modernize the Secretarial correspondence system; and

+$402,000 and 7 workyears will be applied to offices throughout the account to reflect the needs of these offices to more efficiently carry out their responsibilities.

Construction Management

This appropriation provides for the expenses of the Office of Construction Management in an oversight and monitoring role to assist the bureaus and offices of the Department in planning, constructing and operating facilities. Since 1979, this program has focused its efforts on the Bureau of Indian Affairs (BIA) by providing direct and contract support in development and implementation of operational improvements in the BIA facilities program.

Resources requested under the Office of the Secretary for this activity in 1991 total $2,039,000 and 20 workyears, which is an increase of $239,000 and two workyears from the FY 1990 appropriated level. The changes are detailed as follows:

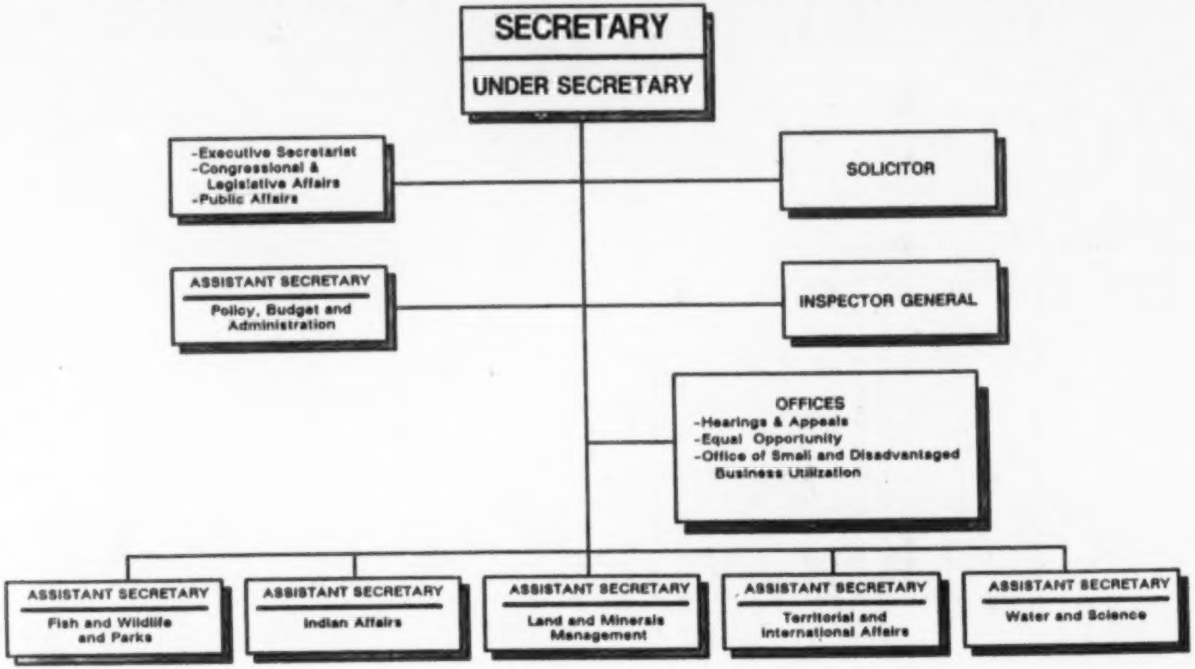
+$77,000 for adjustments to the base program for pay increases, office space costs, Federal Employees Retirement System (FERS) reestimates, and administrative and staffing efficiencies; and

+$162,000 and 2 workyears to develop value engineering capability for bureaus with construction programs.

Authorization

General authorizing legislation for the Office of the Secretary is 43 U.S.C. 1451 and 1457 and Reorganization Plan No. 3 of 1950.

GENERAL ORGANIZATION – U.S. DEPARTMENT OF THE INTERIOR


SECRETARY
UNDER SECRETARY
-Executive Secretariat
-Congressional & Legislative Affairs
-Public Affairs
SOLICITOR
ASSISTANT SECRETARY
Policy, Budget and Administration
INSPECTOR GENERAL
OFFICES
-Hearings & Appeals
-Equal Opportunity
-Office of Small and Disadvantaged Business Utilization
ASSISTANT SECRETARY
Fish and Wildlife and Parks
ASSISTANT SECRETARY
Indian Affairs
ASSISTANT SECRETARY
Land and Minerals Management
ASSISTANT SECRETARY
Territorial and International Affairs
ASSISTANT SECRETARY
Water and Science

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
SALARIES AND EXPENSES

Appropriation Summary Statement
(Program and Performance)

The funds requested in this Appropriation will enable the Secretary to carry out his responsibilities and provide the leadership, supervision, policy and oversight of the bureaus and programs of the Department and will finance the following activities:

1. Departmental Direction - The Office of the Secretary and the Office of Public Affairs provide Departmental direction and contact with the public. The Office for Equal Opportunity administers the Department's responsibilities in equal opportunity programs. Other secretarial offices provide coordination of correspondence, legislation, Congressional liaison and minority business programs.

2. Program Direction and Coordination - Six Assistant Secretaries advise and assist the Secretary on matters of policy in carrying out his statutory responsibilities for the conservation and development of the country's natural resources, Indian affairs, the territories of the United States and the Department's international activities, and all phases of Departmental policy, budget and administrative activities.

3. Policy, Budget and Administration - This activity provides for implementation of program and budget policy, economic and management analysis, environmental review, financial management and personnel policy, administrative services, library and information services and security operations.

4. Hearings and Appeals - This activity provides the quasi-judicial and appellate responsibilities of the Department of the Interior. Administrative law judges and formal boards of appeals render decisions in cases pertaining to: (a) contract disputes; (b) Indian probate matters; (c) public and acquired lands and their resources; (d) submerged offshore lands of the Outer Continental Shelf; (e) surface mining; (f) personnel grievances; (g) environmental impacts; (h) enforcement of the importation and transportation of rare and endangered species; (i) environmental quality; (j) uniform relocation assistance and real property appeals; and (k) Alaska native claims appeals.

5. Aircraft Services - This activity serves as the aviation policy office for the Department to improve Department of the Interior aviation safety and cost effectiveness. This office has Departmentwide responsibility and authority to establish and maintain Departmental air operation standards and provide technical services support to bureaus for aircraft-related problems.

6. Central Services - This activity provides for general administrative expenses including space, postage, FTS, employee compensation and unemployment compensation payments, and this appropriation's share of Working Capital Fund costs.

Appropriation Language Sheet

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

SALARIES AND EXPENSES

For necessary expenses of the Office of the Secretary of the Interior, [$51,045,000] $62,076,000 of which not to exceed $10,000 may be for official reception and representation expenses: [Provided, that Alaskan oil spill damage assessment shall continue at least through September 30, 1990]. (43 U.S.C. 1451,1457; Department of the Interior and Related Agencies Appropriations Act, 1990.)

OFFICE OF THE SECRETARY
Appropriation Language Citations

Appropriation: Salaries and Expenses

Appropriation language and citations:

1. For necessary expenses of the Office of the Secretary of the Interior, $____,

43 U.S.C. 1451, 1457

Reorganization Plan No. 3 of 1950; 64 Stat. 1262, as amended, 66 Stat. 121.

43 U.S.C. 1451 provides that: "There shall be at the seat of government an executive Department to be known as the Department of the Interior, and a Secretary of the Interior, who shall be the head thereof."

43 U.S.C. 1457 Duties of the Secretary - The Secretary of the Interior is charged with the supervision of public business relating to the following subjects and agencies:

1. Alaska Railroad.
2. Alaska Road Commission.
3. Bounty Lands.
4. Bureau of Land Management.
5. Bureau of Mines.
6. Bureau of Reclamation.
7. Division of Territories and Island Possessions.
8. Fish and Wildlife Service.
9. Geological Survey.
10. Indians.
11. National Park Service.
12. Petroleum Conservation.
13. Public Lands, including mines.

Reorganization Plan No. 3 states that: (a) "Except as otherwise provided in subsection (b) of this section, there are hereby transferred to the Secretary of the Interior all functions of all agencies and employees of such Department..." (b) "This section shall not apply to the functions vested by the Administrative Procedure Act (60 Stat. 237) [now covered by sections 551 et seq. and 701 et seq. of Title 5, Government Organization and Employees] in hearing examiners employed by the Department of the Interior, nor to the functions of the Virgin Islands Corporation or of its Board of Directors or officers."

All functions of all other officers of the Department of the Interior and all functions of all agencies and employees of such Department were, with the two exceptions, transferred to the Secretary of the Interior, with power vested in him to authorize their performance or the performance of any of his functions by any of such offices, agencies and employees.

Under authority of Reorganization Plan No. 3 of 1950, the Secretary is empowered to effect transfers of functions and responsibilities, with certain exceptions, and delegate authorities within the Department or its agencies to address changing requirements in the overall organization of the Department.

2. of which not to exceed $______ may be for official reception and representation expenses

No specific authority.

The Secretary, as a member of the President's Cabinet, is called upon from time to time to hold official receptions for foreign dignitaries and other high ranking officials. The above language both authorizes and limits the amount of funds used for this purpose.

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1990 Estimate
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission

Appropriation/Activity/Subactivity	Amount 1990 Estimate
Salaries and Expenses	
(1) Departmental Direction	
a. SECY'S IMMED OFFICE	1,770
b. EXEC SECRETARIAT	466
c. CONG & LEGIS AFFAIRS	1,180
d. EQUAL OPPORTUNITY	1,366
e. PUBLIC AFFAIRS	870
f. SM & DISADV BUS UTIL	419
Total, Departmental Direction	6,071
(2) Program Direction and Coordination	
a. A/S-WATER & SCIENCE	691
b. A/S-LAND & MIN MGMT	753
c. A/S-FISH & WLD & PKS	612
d. A/S-INDIAN AFFAIRS	665
e. A/S-TERR & INT'L AFF	549
f. A/S-POLICY, BUD & ADM	789
Total, Prog. Direction & Coordination	4,059
(3) Policy, Budget and Administration	
a. ENVIRON PROJ REVIEW	2,340
b. HAZARDOUS MATERIALS MGMT	0
c. ACQUIS & PROP MGMT	1,264
d. PERSONNEL	1,843
e. ADMINISTRATIVE SVCS	920

Format of Fiscal 1991 Congressional Budget Submission

Appropriation/Activity/Subactivity	Amount 1990 Estimate
Salaries and Expenses	
(1) Departmental Direction	
a. SECY'S IMMED OFFICE	1,770
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c. CONG & LEGIS AFFAIRS	1,180
d. EQUAL OPPORTUNITY	1,366
e. PUBLIC AFFAIRS	870
f. SM & DISADV BUS UTIL	419
g. QUALITY ASSURANCE	0
Total, Departmental Direction	6,071
(2) Program Direction and Coordination	
a. A/S-WATER & SCIENCE	691
b. A/S-LAND & MIN MGMT	753
c. A/S-FISH & WLD & PKS	612
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c. PERSONNEL	1,843
d. ADMINISTRATIVE SVCS	920

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1990 Estimate
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission

Appropriation/Activity/Subactivity	Amount 1990 Estimate
Salaries and Expenses	
f. LIBRARY SERVICES	1,385
g. INFO RESOURCES MGMT	2,230
h. MANAGEMENT IMPROVEMENT	1,174
i. PROGRAM ANALYSIS	1,791
j. REGULATORY OVERSIGHT	0
k. BUDGET	1,930
l. FINANCIAL MANAGEMENT	1,146
m. SECURITY AND DRUG ENFORCEMENT	658
Total, Policy, Budget & Admin	16,681
(4) HEARINGS & APPEALS	5,904
(5) AIRCRAFT SERVICES	1,984
(6) CENTRAL SERVICES	15,632
Total, Salaries and Expenses	50,331
Construction Management	
(1) CONSTRUCTION MANAGEMENT	1,800

Format of Fiscal 1991 Congressional Budget Submission

Appropriation/Activity/Subactivity	Amount 1990 Estimate
Salaries and Expenses	
e. LIBRARY SERVICES	1,385
f. INFO RESOURCES MGMT	2,230
g. MANAGEMENT IMPROVEMENT	1,174
h. PROGRAM ANALYSIS	1,791
i. BUDGET	1,930
j. FINANCIAL MANAGEMENT	1,146
k. SECURITY AND DRUG ENFORCEMENT	658
Total, Policy, Budget & Admin	16,681
(4) HEARINGS & APPEALS	5,904
(5) AIRCRAFT SERVICES	1,984
(6) CENTRAL SERVICES	15,632
Total, Salaries and Expenses	50,331
Construction Management	
(1) CONSTRUCTION MANAGEMENT	1,800

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1990 Estimate
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission		Format of Fiscal 1991 Congressional Budget Submission	
Appropriation/Activity/Subactivity	Amount 1990 Estimate	Appropriation/Activity/Subactivity	Amount 1990 Estimate
Salaries and Expenses		Salaries and Expenses	
Items not included in 1990 structure:			
QUALITY ASSURANCE...........................	0		
GRAND TOTAL, OFFICE OF THE SECRETARY.........	52,131	GRAND TOTAL, OFFICE OF THE SECRETARY.........	52,131

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1991 Request
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission		Format of Fiscal 1991 Congressional Budget Submission	
Appropriation/Activity/Subactivity	Amount 1991 Request	Appropriation/Activity/Subactivity	Amount 1991 Request
Salaries and Expenses		Salaries and Expenses	
(1) Departmental Direction		(1) Departmental Direction	
a. SECY'S IMMED OFFICE	2,314	a. SECY'S IMMED OFFICE	2,314
b. EXEC SECRETARIAT	548	b. EXEC SECRETARIAT	548
c. CONG & LEGIS AFFAIRS	1,250	c. CONG & LEGIS AFFAIRS	1,250
d. EQUAL OPPORTUNITY	1,497	d. EQUAL OPPORTUNITY	1,497
e. PUBLIC AFFAIRS	921	e. PUBLIC AFFAIRS	921
f. SM & DISADV BUS UTIL	445	f. SM & DISADV BUS UTIL	445
		g. QUALITY ASSURANCE	500
Total, Departmental Direction	6,975	Total, Departmental Direction	7,475
(2) Program Direction and Coordination		(2) Program Direction and Coordination	
a. A/S-WATER & SCIENCE	730	a. A/S-WATER & SCIENCE	730
b. A/S-LAND & MIN MGMT	901	b. A/S-LAND & MIN MGMT	901
c. A/S-FISH & WLD & PKS	718	c. A/S-FISH & WLD & PKS	718
d. A/S-INDIAN AFFAIRS	706	d. A/S-INDIAN AFFAIRS	706
e. A/S-TERR & INT'L AFF	595	e. A/S-TERR & INT'L AFF	595
f. A/S-POLICY, BUD & ADM	939	f. A/S-POLICY, BUD & ADM	939
Total, Prog. Direction & Coordination	4,589	Total, Prog. Direction & Coordination	4,589
(3) Policy, Budget and Administration		(3) Policy, Budget and Administration	
a. ENVIRON PROJ REVIEW	3,549	a. ENVIRON PROJ REVIEW	3,549
b. HAZARDOUS MATERIALS MGMT	0		
c. ACQUIS & PROP MGMT	2,096	b. ACQUIS & PROP MGMT	2,096
d. PERSONNEL	1,833	c. PERSONNEL	1,833

SALARIES AND EXPENSES
Justification of Base Adjustments
(Dollar amounts in thousands)

	FTE-T	Amount
Adjustment for 1990 Effect of P.L. 99-177	0	+$714

The Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), as amended, required a reduction in non-exempt programs in FY 1990. Since the reduction applies to FY 1990 only, this adjustment is made to allow a more comparable basis for showing program changes from FY 1990 to FY 1991.

	FTE-T	Amount
Adjustment for Administrative Efficiency	0	-$160

The Department is proposing to decrease spending for consultants, travel, overtime, supplies, and equipment by about 5 percent to improve administrative efficiency and place greater priority on 1991 program initiatives. Specific reductions are proposed in the following areas:

Consultants	-$ 14
Travel	- 48
Overtime	- 65
Supplies	- 28
Equipment	- 5
Total	-$160

	FTE-T	Amount
Adjustment for Staffing Efficiency	-4	-$204

Savings are proposed from a planned reduction in the average grade achieved by filling vacant positions at an average of one grade lower than previously filled and from taking into account an expected additional lapse of 30 days before filling positions that become vacant in 1991. Specific reductions follow:

Average Grade	-$ 91
Lapse	- 113
Total	-$204

This reduction is expected to result from a lapse of 4 positions. This lapse in positions is not displayed in any individual subactivity, but instead is reflected as an overall reduction.

	FTE-T	Amount
Additional Cost in 1991 for the 1990 Pay Raise	0	+$1,384
Anticipated 1990 pay increase supplemental		0
Amount of 1990 pay increase to be absorbed		$1,034
Total cost in 1990 of pay increase		1,034
Adjustment for full-year cost in 1991 of 1990 pay increase		350
Total adjustment for 1990 pay increase		$1,384

The 1990 cost of $1,034,000 which covers three quarters of the full-year cost of the pay raise and which will be fully absorbed in 1990 includes $1,025,376 for general schedule pay and $8,624 for wage board pay. An additional $350,000 will be required in

Additional Cost in 1991 for the 1990 Pay Raise (continued)

1991 to cover the full-year cost of the 1990 pay increase. Of this amount, $346,504 is for general schedule pay and $3,496 is for wage board pay.

Additional Cost in 1991 for the 1991 Pay Raise .... 0 +$414

The adjustment is for the additional amount needed in 1991 to cover 40 percent of the additional three quarter's cost of the estimated 3.5 percent pay raise effective in January 1991. Of this amount, $410,646 is for the general schedule pay and $3,354 is for the wage board pay. The 1991 cost of the remaining 60 percent will be absorbed in FY 1991.

Adjustment for Workers Compensation Payments.................... 0 -$3

The adjustment is for decreased costs for compensation to injured employees to be paid to the Department of Labor, Federal Employees Compensation Fund, pursuant to 5 U.S.C. 8147(b) as amended by Public Law 94-273.

Rental Payments to GSA.................................. 0 +$792

The adjustment is for increased costs payable to GSA resulting from higher rates for office and non-office space.

Adjustment for CSRS/FERS Retirement Cost .... 0 +$202

The adjustment is for the increase in estimated retirement costs resulting from the continuing growth in the relative proportion of FERS employees in the office work force.

Adjustment for Departmental Working Capital Fund .... 0 +$47

The adjustment is for increased costs assigned to the Office of the Secretary for administrative services provided on a Department-wide basis. In FY 1991, an adjustment will be made to provide separate identification of activities related to the safety and occupational health of employees, safety of contractor workforces, and public visitor safety. These increases will be largely offset by adjustments for the Washington Interagency Telecommunications System (WITS).

National Communication System .... 0 +$50

This adjustment is for the national security and emergency preparedness telecommunications national level program. As one of 24 key agencies, the Department of Interior will provide funds for emergency communications support activities.

Adjustment for One Additional Paid Day in FY 1991	0	+$123
The increase in personnel compensation results from there being one more paid day in FY 1991 than in FY 1990.		
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TOTAL, BASE ADJUSTMENTS..................................	-4	+$3,359

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1991 Request
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission			Format of Fiscal 1991 Congressional Budget Submission		
Appropriation/Activity/Subactivity		Amount 1991 Request	Appropriation/Activity/Subactivity		Amount 1991 Request
Salaries and Expenses			**Salaries and Expenses**		
e.	ADMINISTRATIVE SVCS	1,154	d.	ADMINISTRATIVE SVCS	1,154
f.	LIBRARY SERVICES	1,441	e.	LIBRARY SERVICES	1,441
g.	INFO RESOURCES MGMT	2,352	f.	INFO RESOURCES MGMT	2,352
h.	MANAGEMENT IMPROVEMENT	2,167	g.	MANAGEMENT IMPROVEMENT	2,167
i.	PROGRAM ANALYSIS	2,766	h.	PROGRAM ANALYSIS	2,766
j.	REGULATORY OVERSIGHT	0			
k.	BUDGET	2,049	i.	BUDGET	2,049
l.	FINANCIAL MANAGEMENT	1,468	j.	FINANCIAL MANAGEMENT	1,468
m.	SECURITY AND DRUG ENFORCEMENT	759	k.	SECURITY AND DRUG ENFORCEMENT	759
	Total, Policy, Budget & Admin	21,634		Total, Policy, Budget & Admin	21,634
(4)	HEARINGS & APPEALS	6,263	(4)	HEARINGS & APPEALS	6,263
(5)	AIRCRAFT SERVICES	2,082	(5)	AIRCRAFT SERVICES	2,082
(6)	CENTRAL SERVICES	20,033	(6)	CENTRAL SERVICES	20,033
Total, Salaries and Expenses		61,576	Total, Salaries and Expenses		62,076
Construction Management			**Construction Management**		
(1)	CONSTRUCTION MANAGEMENT	2,039	(1)	CONSTRUCTION MANAGEMENT	2,039

OFFICE OF THE SECRETARY

Activity/Subactivity Change Crosswalk - FY 1991 Request
(In thousands of dollars)

Format of Fiscal 1990 Congressional Budget Submission		Format of Fiscal 1991 Congressional Budget Submission	
Appropriation/Activity/Subactivity	Amount 1991 Request	Appropriation/Activity/Subactivity	Amount 1991 Request
Salaries and Expenses		Salaries and Expenses	
Items not included in 1990 structure:			
QUALITY ASSURANCE	500		
GRAND TOTAL, OFFICE OF THE SECRETARY	64,115	GRAND TOTAL, OFFICE OF THE SECRETARY	64,115

OFFICE OF THE SECRETARY
Salaries and Expenses
Summary of requirements
(Dollar Amounts in Thousands)

Appropriation: Salaries and Expenses

Summary of base adjustments:	FTE-T	Amount	FTE-T	Amou
Appropriation enacted, 1990			595	51,0
Reduction pursuant to P.L. 99-177			0	-7
Adjusted FY 1990 Appropriation			595	50,3
ADJUSTMENTS TO BASE:				
Adjustment for 1990 Impact of P.L. 99-177		714		
Adjustment for Administrative Efficiency		-160		
Adjustment for Staffing Efficiency	-4	-204		
Additional Cost in 1991 for the 1990 Pay Raise		1,384		
Additional Cost in 1991 for the 1991 Pay Raise		414		
Adjustment for Workers Compensation Payments		-3		
Adjustment for Rental Payments to GSA		792		
Adjustment for CSRS/FERS Retirement Costs		202		
Adjustment for Departmental Working Capital Fund		47		
National Communication System		50		
Adjustment for One Additional Paid Day in FY 1991		123		
			-4	3,3
FY 1991 Base Budget			591	53,6
Program changes (Changes to base budget, detailed below)			36	8,3
Total Requirements (FY 1991 Estimate)			627	62,0

OFFICE OF THE SECRETARY
Salaries and Expenses
Summary of requirements
(Dollar Amounts in Thousands)

Comparison by activity/ subactivity:	1989 Actual		1990 Enacted to Date		PL 99-177 Reduction	1990 Adjusted Approp.	1991 Base		1991 Estimate		Inc(+)/Dec(-) from 1990 Appropriation		Inc(+)/Dec(-) from 1990 Adjusted Appropriation	Inc(+)/Dec(-) from 1991 Base	
	FTE-T	Amount	FTE-T	Amount	Amount	Amount	FTE-T	Amount	FTE-T	Amount	FTE-T	Amount	Amount	FTE-T	Amount
Departmental direction:															
Secretary's immediate office....	27	1,759	27	1,795	-25	1,770	27	1,885	27	2,314	0	519	544	0	429
Executive secretariat...........	13	465	13	473	-7	466	13	493	14	548	1	75	82	1	55
Cong. & legislative affairs.....	24	1,139	24	1,197	-17	1,180	24	1,250	24	1,250	0	53	70	0	0
Equal opportunity...............	28	1,322	28	1,385	-19	1,366	28	1,447	29	1,497	1	112	131	1	50
Public affairs..................	16	865	16	882	-12	870	16	921	16	921	0	39	51	0	0
Small & disadv. business util...	7	418	7	425	-6	419	7	445	7	445	0	20	26	0	0
Quality assurance...............	0	0	0	0	0	0	0	0	10	500	10	500	500	10	500
Subtotal.....................	115	5,968	115	6,157	-86	6,071	115	6,441	127	7,475	12	1,318	1,404	12	1,034
Program direction & coordination:															
A/S-Water & science.............	12	622	12	701	-10	691	12	730	12	730	0	29	39	0	0
A/S-Land & minerals management..	14	822	12	764	-11	753	12	801	14	901	2	137	148	2	100
A/S-Fish & wildlife & parks.....	12	664	11	621	-9	612	11	668	12	718	1	97	106	1	50
A/S-Indian affairs..............	12	581	12	674	-9	665	12	706	12	706	0	32	41	0	0
A/S-Territorial & int'l. affairs	7	476	7	557	-8	549	7	595	7	595	0	38	46	0	0
A/S-Policy, budget & admin......	13	887	11	800	-11	789	11	839	13	939	2	139	150	2	100
Subtotal.....................	70	4,052	65	4,117	-58	4,059	65	4,339	70	4,589	5	472	530	5	250
Policy, budget & administration:															
Environmental project review....	28	1,998	33	2,373	-33	2,340	33	2,449	38	3,549	5	1,176	1209	5	1,100
Acquisition & property mgmt.....	20	1,286	19	1,282	-18	1,264	19	1,346	22	2,096	3	814	832	3	750
Office of personnel.............	30	1,730	31	1,869	-26	1,843	31	1,956	29	1,833	-2	-36	-10	-2	-123
Administrative services.........	16	891	16	933	-13	920	16	974	20	1,154	4	221	234	4	180
Library services................	28	1,354	28	1,405	-20	1,385	28	1,441	28	1,441	0	36	56	0	0
Information resources management	42	2,223	42	2,262	-32	2,230	42	2,352	42	2,352	0	90	122	0	0
Management improvement..........	19	1,129	19	1,191	-17	1,174	19	1,247	19	2,167	0	976	993	0	920
Program analysis................	29	1,764	29	1,816	-25	1,791	29	1,936	37	2,766	8	950	975	8	830
Office of budget................	32	1,857	32	1,957	-27	1,930	32	2,049	32	2,049	0	92	119	0	0

OFFICE OF THE SECRETARY
Salaries and Expenses
Summary of requirements
(Dollar Amounts in Thousands)

Comparison by activity/ subactivity:	1989 Actual		1990 Enacted to Date		PL 99-177 Reduction	1990 Adjusted Approp.	1991 Base		1991 Estimate		Inc(+)/Dec(-) from 1990 Appropriation		Inc(+)/Dec(-) from 1990 Adjusted Appropriation	Inc(+)/Dec(-) from 1991 Base	
	FTE-T	Amount	FTE-T	Amount	Amount	Amount	FTE-T	Amount	FTE-T	Amount	FTE-T	Amount	Amount	FTE-T	Amount
Policy, budget & administration: (continued)															
Financial management............	18	1,054	18	1,162	-16	1,146	18	1,218	19	1,468	1	306	322	1	250
Security & drug enforcement.....	13	528	13	667	-9	658	13	709	13	759	0	92	101	0	50
Subtotal.....................	275	15,814	280	16,917	-236	16,681	280	17,677	299	21,634	19	4,717	4,953	19	3,957
Hearings & appeals:...............	100	5,764	100	5,988	-84	5,904	100	6,263	100	6,263	0	275	359	0	0
Aircraft services:................	32	1,789	35	2,012	-28	1,984	35	2,082	35	2,082	0	70	98	0	0
Central services:.................		15,680		15,854	-222	15,632	-4	16,888	(4)	20,033	(4)	4,179	4,401	0	3,145
Total requirements...........	592	49,067	595	51,045	-714	50,331	591	53,690	627	62,076	32	11,031	11,745	36	8,386

OFFICE OF THE SECRETARY
SALARIES AND EXPENSES

STATEMENT ON EFFECT OF GRAMM-RUDMAN-HOLLINGS REDUCTION

The Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), as amended, required a reduction in non-exempt programs in FY 1990. In the Salaries and Expenses account in the Office of the Secretary (OS), this amounts to a reduction of $714,000 from the amount enacted for FY 1990.

In order to accommodate this reduction, various steps have been taken throughout OS. These include:

1. A hiring freeze has been imposed on all offices funded through this appropriation. Exceptions to this freeze are granted only in limited cases. As a result, savings in the use of FTEs will occur.

2. Funding plans for items other than salaries and benefits have been limited to FY 1989 levels or less in every office. In addition, most equipment purchases have been canceled or delayed until FY 1991 or later.

These steps have been implemented so that the Office of the Secretary may continue to function in FY 1990 within the resources available. Monitoring of obligations occurs on a month-by-month basis to assure prudent financial management within OS. Further measures may be instituted as the year progresses if the actions described above do not yield the requisite savings.

Authorization:

The basic authorization for the Office of the Secretary is 43 U.S.C. 1451 and 1457 and Reorganization Plan No. 3 of 1950. Additional specific authorizations are cited as appropriate by activity/subactivity.

Justification of Program and Performance

Activity: Departmental Direction
Subactivity: Secretary's Immediate Office

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,795	1,770	1,885	2,314	429
(FTE-T)	27	27	27	27	0

Objectives: The Secretary of the Interior is responsible for providing, on a departmental basis, executive direction in the areas of Federally-owned land and natural resources. This includes fostering the wise use of land and water resources, protecting fish and wildlife, preserving the environmental and cultural values of national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department has responsibility for programs serving the American Indians and Alaska Natives and people who live in Island Territories under United States administration.

The Office of the Secretary, under the new Administration, continues to bring balanced resource management to the Department by providing stewardship to protect and conserve America's natural resource heritage and through the appropriate development of the energy and other resources necessary for America's present and future growth.

Base Program: The Secretary's Immediate Office provides the direct staff assistance to the Secretary necessary for the overall direction and coordination responsibilities of the Department.

In 1991 the Secretary will continue to address major Departmental program initiatives identified in 1990 while at the same time directing a program of management improvements designed to maintain the integrity of essential Department programs and address problems as they occur.

The Department will continue to pursue a wide range of program objectives, including: protection and enhancement of our parks, refuges, and public lands with a special emphasis on environmental values, improved maintenance and the facilities infrastructure; identification and appropriate development of domestic energy and mineral resources; funding of water projects and other water resource activities in a cost-effective and timely manner; provision of quality recreational opportunities for growing numbers of our citizens while offsetting a portion of the costs of such services through user fees; improvements to Indian education and better management of other Native American programs; playing a prominent role in the Administration's wetlands initiatives; and elimination of the possession, use, cultivation, and trafficking of illegal drugs on public lands.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,885	2,314	429
FTE-T	27	27	0

The requested increase of $429,000 is estimated as the Office of the Secretary's share of the funding for the Department's Take Pride in America effort. This program is funded on a reimbursable basis by Interior bureaus and the Office of the Secretary. This level of funding includes the salaries, benefits and related expenses of the seven reimbursable employees associated with the program. Take Pride in America is a national public awareness campaign designed to encourage wise use of the lands and resources shared by all Americans. Many Federal, State, local and private sector organizations are involved in this program. The focus of the campaign is at the grassroots level. The campaign provides a unifying theme for thousands of local and individual activities. Through national public service announcements, public-private partnerships, a national awards program and other activities, the campaign seeks to provide a boost for Stewardship action and awareness efforts around the nation.

Distribution of change by object class:

The object class detail for the proposed increase of $429,000 is as follows:

Object Class	FTE	Amount
Personnel compensation	0	$319,000
Personnel benefits		64,000
Travel		33,000
Communications, utilities, and miscellaneous charges		13,000
Total	0	$429,000

Justification of Program and Performance

Subactivity: Executive Secretariat

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	473	466	493	548	55
(FTE-T)	13	13	13	14	1

Objectives: The Executive Secretariat (ES) is the major organizational unit for the management and coordination of information, policy recommendations and analyses for the Secretary, Under Secretary and Assistant Secretaries in the Department. This Office provides a substantive review of all incoming correspondence for the Secretary, Under Secretary and Assistant Secretaries' signature and for decision-making continuity with past policy statements or conformance with current policy positions. ES provides components of the DOI with adequate and consistent guidance on the requests of the Secretary, Under Secretary and Assistant Secretaries as well as coordination of feedback on their views and decisions. ES controls all action on documents within a specified timeframe to ensure an accurate, appropriate and timely response. The Office provides a wide range of administrative support services for the Department including duplication and distribution of the Departmental Weekly Highlights, a daily computerized list of all incoming significant correspondence, a daily computerized list of Congressional correspondence for the Secretary, a weekly overdue correspondence list for distribution throughout the DOI and a daily tracking system of invitations to the Secretary. The ES coordinates the flow of information and serves as the point of contact involving matters with the White House, the State Department, the National Security Council and other federal departments and agencies with officials in the DOI. This Office controls the distribution of sensitive communications and serves as a channel for communications and instructions between DOI and the above listed organizations. ES also maintains multi-reference files and current issue files which provide the Office of the Secretary with a source for immediate answers on issue status, signed correspondence and completed action memoranda.

Base Program: ES serves as the primary center of information flow for the Department. All departmental correspondence is managed in ES and includes the following tasks: (1) open and sort all mail (2) read (3) analyze (4) abstract (5) enter data into automated system (6) update status as necessary (7) close out final action in system. In addition to these tasks is the preparation of daily and weekly reports including system print out, copying, assembling and distribution. This Office also operates the autopen for the executive offices. ES analysts and Senior Review Officers respond to inquiries from throughout DOI concerning status and criticalness of correspondence, memorandum, etc. All outgoing correspondence is reviewed in this Office for style, format, accuracy and coordination. Through consolidation of many channels of information flow, ES tracks, ensures coordination and maintains files on over 6,000 items per month, a substantial increase over the previous years.

The ES became computerized in March, 1988, enabling this Office to maintain better records on incoming and outgoing correspondence, to track responses in a more efficient and effective manner and to compile detailed information quickly for the Offices of the Secretary and Under Secretary. The computer has provided detailed information concerning the growth in controlled items of correspondence in 1989 over 1988 in both critical mail as well as invitations to the Secretary. The number of controlled correspondence items in each month of 1989 has doubled over that same number controlled each month in 1988. From March 1988 (when ES was computerized) until December 1988, ES clocked in 15,419 letters. Of this number, 7,277 were controlled for response. In addition, ES processed approximately 20,000 pieces of bulk mail. Bulk mail includes White House bulk, write-in campaigns and other secondary mail.

In 1989, ES clocked in 32,643 pieces of correspondence. Of this number, 14,678 letters were controlled for response. The volume of bulk mail from the White House has also increased substantially (approximately 25,000 pieces of correspondence) and write-in campaigns added another 14,300 items. The Secretary's Invitation Tracking System, maintained in ES, provides a daily tracking system of invitations to the Secretary to attend or speak at various functions throughout the country and in the Washington, D.C. area. In FY 1989, the Secretary received 1,718 invitations which were entered into the Invitation Tracking System. This function has placed an additional burden on an already strained computer system and ES personnel. Still lacking in the computer system, however, is the ability of ES, and therefore the Secretary and Under Secretary, to have a completely computerized file of incoming and outgoing documents in one place for instant retrieval. Retrieval of this information is still done manually.

The follow-up function of this Office reduces the possibility that time-critical and sensitive correspondence from Members of Congress, the public, industry, DOI staff and other federal agencies will be mishandled, lost or delayed. The ES expedites the coordination of documents requiring immediate action and consults with key staff to develop procedures to reduce the response time for correspondence and issue development. The Office also assists with the coordination across bureaus and clarifies standards for accountability in DOI operating procedures.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	493	548	55
FTE-T	13	14	1

The proposed increase of $55,000 is requested to provide full funding for one additional position and related costs. The additional position is needed to handle the substantial increase in workload and related activities occurring in ES.

The remaining funds will be used to pay for equipment and other services.

Distribution of change by object class:

The object class detail for the proposed increase of $55,000 and one workyear is as follows:

Object Class	FTE-T	Amount
Personnel compensation	1	$45,000
Personnel benefits		7,000
Other services		1,000
Equipment		2,000
Total	1	$55,000

Justification of Program and Performance

Subactivity: Congressional and Legislative Affairs

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,197	1,180	1,250	1,250	0
(FTE-T)	24	24	24	24	0

Objectives: The Office of Congressional and Legislative Affairs and the Legislative Counsel discharges the duties of the Secretary of the Interior with authority and direct responsibility for all legislative and Congressional liaison activities. The Office serves as the Department's principal liaison with Congressional committees (except appropriations) and individual Members of Congress; communicates policies of the Department and viewpoints of the Secretary regarding Congressional and legislative matters and dispatches press releases and information to interested Members and their staffs as decisions are made; notifies Members of selected contract and grant awards in their constituencies; insures the coordination, unification and presentation of the Department's views on all legislation affecting the Department through formal reports or testimony; as a service to Members of Congress drafts legislation relating to the Department's programs as requested; arranges for and participates in briefings on the administration of programs and legislation related to the Department and works with bureaus and offices in the preparation of briefing materials for such meetings or hearings (i.e., developing maps, lists, factual data, etc.); arranges Congressional meetings for the Secretary, Under Secretary or other officials or Members; coordinates and handles thousands of varied written and telephone requests from Members of Congress and their staffs in an expeditious manner; and monitors the preparation and distribution of required statutory reports to Congress and specifically prepares certain portions of some of these reports.

Base Program: The Office handles the complete range of Congressional and legislative responsibilities for the Department except for budget and appropriations matters coming before the House and Senate Appropriations Committees. It expeditiously reviews all Congressional correspondence addressed to the Secretary, Under Secretary, and Assistant to the Secretary and Director of Congressional and Legislative Affairs. In cooperation with the Executive Secretariat, this Office provides Departmental direction and guidance in responding to Congressional mail and inquiries. The Office assures the Secretary's policies are appropriately articulated and that responses relating to legislative and constituent issues are accurately written and have received appropriate clearances.

The Office handles telephone inquiries from the Congress, constituent groups, and the general public on every aspect of Departmental activities. These phone calls and letters require considerable staff case work in order to provide appropriate and expeditious responses.

The Office is also responsible for the timely preparation of statutory and other reports to Congress, assuring that they have followed Congressional intent and Secretarial and Administration policy, that they have undergone any required Departmental and Office of Management and Budget (OMB) clearance processes, and are properly delivered to the Congress. It is also specifically responsible for direct preparation of reports which entail specific coordination with several Interior offices and other Federal agencies and the meeting of deadlines.

The Office coordinates the development of the Department's views on legislative matters, other than those before the appropriation committees; the presentation of these views to the Congress in reports and testimony; and the appearance of Departmental representatives before the Congress. Activities in this regard entail supervising, selecting and preparing witnesses, developing and clearing testimony within the Department and through OMB and timely delivery to the Congress, providing background material, and reviewing and editing transcripts to provide expeditious follow-up to requested information. The Office publishes a regular summary of Congressional action for Departmental use, including upcoming hearings, floor and committee action, and information of interest to the Department in the Congressional Record.

In response to written requests from Congressional committees for reports on legislation, the Office circulates legislation in the Department for comment, arbitrates inter- and intra-departmental disagreements on the legislation, prepares a formal report to the committee, coordinates the review and clearance of the report by the Department and OMB, and assures that the report is delivered to the appropriate committee in a timely fashion.

The staff also responds to requests from OMB for Departmental views on legislation, other agencies' reports on legislation, and other agencies' legislative proposals. In addition, the Office prepares and clears legislative drafting services to Members of Congress upon request. The Office establishes and maintains the legislative history files, Congressional documents and public laws and serves as the central clearinghouse for inquiries from bureaus and offices, the Congress, OMB and other Executive agencies, and the general public about the Department's position on pending legislation.

A substantial amount of time is spent in daily meetings with Departmental staffs, Congressional Members and their staffs, committees, the White House and OMB. New Congressional offices frequently request our staff to provide briefings on current Departmental issues of concern to Members and their constituents. Frequent trips to Congressional offices by personnel in this Office to provide information on the Department's programs, policies, and plans are expected to continue at current or increased levels in FY 1990 and FY 1991.

In order to keep Congressional offices abreast of Departmental issues, this Office provides written information on a continuous basis. This includes copies of Secretarial press releases, background material on contract and grant awards, legislative summaries on Departmental bills, drafting services, and other information, as appropriate. These services are expected to continue at a similar level in FY 1990 and FY 1991.

Actual workload figures for FY 1989, and estimates for FY 1990 and FY 1991 are as follows:

	FY 1989 Actual*	FY 1990 Estimate	FY 1991 Estimate
(a) CONGRESSIONAL LIAISON			
Congressional and Other Calls Received	50,000	50,000	50,000
Congressional and Other Calls Made	36,000	36,000	36,000
Number of Finalized Letters, Memoranda or Documents Reviewed	9,000	9,000	9,000
Incoming Correspondence Received for Analysis and Coordination or Interim and Final Response	1,900	2,000	2,000
(b) LEGISLATION			
Congressional and Other Calls Received	53,000	53,000	53,000
Congressional and Other Calls Made	33,000	33,000	33,000

Requests for Departmental Reports Processed	1,400	1,500	1,500
Hearings Handled in which DOI Staffs Participated	300	300	300

*FY 1989 workload data are rounded to nearest hundred.

No increase in funds is requested for 1991.

OFFICE OF THE SECRETARY
SALARIES AND EXPENSES
ACTIVITY SUMMARY

(Dollar Amounts in Thousands)

ACTIVITY: DEPARTMENTAL DIRECTION	FY 1989 Actual	1990 Approp. Enacted	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) from Base
Subactivities:						
SECY'S IMMED OFFICE	1,759	1,795	1,770	1,885	2,314	429
EXEC SECRETARIAT	465	473	466	493	548	55
CONG & LEGIS AFFAIRS	1,139	1,197	1,180	1,250	1,250	0
EQUAL OPPORTUNITY	1,322	1,385	1,366	1,447	1,497	50
PUBLIC AFFAIRS	865	882	870	921	921	0
SM & DISADV BUS UTIL	418	425	419	445	445	0
QUALITY ASSURANCE	0	0	0	0	500	500
Total, Departmental Direction	5,968	6,157	6,071	6,441	7,475	1,034

Justification of Program and Performance

Subactivity: Equal Opportunity

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,385	1,366	1,447	1,497	50
(FTE-T)	28	28	28	29	1

Objectives: The Office for Equal Opportunity (OEO) is responsible for the development and enforcement of civil rights and equal opportunity programs pursuant to existing laws, Executive Orders and regulations. It is the focal point for civil rights and equal opportunity functions in the Department and its primary objectives are to ensure equal opportunity for all Department of the Interior (DOI) employees and in its Federally assisted programs. To meet its objectives, the OEO develops policy, programs and provides guidance to assure proper implementation of the governing laws, Executive Orders and regulations; reviews, evaluates and monitors the performance of constituents pertaining to equal opportunity and civil rights; represents the Department with state and local officials; leads programmatic agencies and special interest groups; and serves as expert advisor to the Secretariat and heads of major operating components in the area of equal opportunity. The OEO also has responsibility for policy with respect to Historically Black College and University Programs, pursuant to Executive Order 12320.

Specific functions by major program area are described below:

Federal Equal Employment Opportunity

The Office's work in the area of equal employment opportunity encompasses three major thrusts - education, evaluation and enforcement. The responsibilities of the Office are to: establish Departmental policy; manage the processing, investigating and adjudicating of discrimination complaints; provide guidance and technical direction to bureaus and offices; collect and disseminate trend data and assess program sufficiency; coordinate with lead agencies; and participate in cooperative endeavors to improve employment opportunities and community conditions that affect employability.

Federal Financial Assistance

The Federal Financial Assistance Programs Staff develops policies, regulations, guidelines and programs to ensure compliance with: (a) Title VI of the Civil Rights Act of 1964, (b) Section 504 of the Rehabilitation Act of 1973, (c) Title IX of the Education Amendments of 1972, and (d) the Age Discrimination Act of 1975. These statutory provisions prohibit discrimination in Federally funded programs on the basis of race, color, national origin, age, handicap and in education programs, on the basis of sex. The staff is also responsible for the implementation of Section 504 of the Rehabilitation Act of 1973, as amended, which prohibits discrimination on the basis of handicap in federally conducted programs. This amendment extends the equal opportunity mandate of Section 504 to programs and activities directly conducted by Federal agencies.

Base Program: The Office for Equal Opportunity develops policy and provides guidance throughout the Department in the implementation of its equal opportunity programs. More specifically, it provides oversight, sets the tone, gives directional guidance, and establishes the priorities for various programs. Through ongoing evaluations and studies, it determines whether programs are meeting the spirit and intent of the law. The base program activities of the Office for Equal Opportunity are described by program area as follows:

Federal Employment Programs

During FY 1989, the Department continued to focus on expediting complaints processing. The Federal Employment Programs Staff started FY 1989 with 394 cases at the Department and 39 cases at EEOC pending hearing. During FY 1989, 353 new cases were received, for a total processing of 786 cases. Three hundred fourteen cases were closed during FY 1989. At the end of FY 1989, the Department had 426 open cases and 46 cases at EEOC pending hearing.

The Department continues to provide technical training and assistance to the Bureaus in complaint processing with special attention to the counseling process. Training sessions were held in 1989 for Bureau level staff managers and Alternate EO Officers. During FY 1989, there was a 25 percent increase in the number of complaints filed. This increase in complaints has required the Department to work closely with the bureaus especially in the area of complaints resolution. Four bureaus' had new EO Officers in FY 1989. These changes impacted the bureaus ability to close cases.

A training module covering affirmative action, complaints procedure and early resolution, sexual harassment and reasonable accommodation of the handicapped was prepared by the Department and a pilot training session using the module was conducted.

The Department started FY 1990 with 426 cases and 46 cases at EEOC pending hearing. During FY 1990, it is estimated that 299 cases will be filed for a total of 771 cases to be processed. Three hundred and ninety-five (395) cases will be closed during 1990. The Department will end FY 1990 with 336 cases and 40 cases pending at EEOC.

A main initiative of FY 1990 will be the training of all the Department's managers and supervisors in their equal opportunity responsibility in the areas of affirmative action complaints prevention and early resolution, sexual harassment and reasonable accommodation of the handicapped. The Department will assist the bureaus in the training of higher level managers by providing four training sessions to bureau EO staff nationwide on how to train managers on their EO functions.

During FY 1990 the Department will concentrate on complaints prevention and early resolution with the goal of reducing the workload by FY 1991 to the number of complaints received during that year.

During FY 1991 it is estimated the number of complaints filed will be reduced by 10% from the 299 cases filed in FY 1990. Two hundred and seventy (270) new complaints will be added to the 376 active complaints for a total of 646 complaints to be processed. Three hundred and fifty (350) complaints will be closed. The Department will end FY 1991 with 296 active complaints of which 50 will be pending at EEOC and 246 will be pending at the Department of the Interior.

At the end of FY 1991 it is estimated that the number of open complaints pending in the Department will not exceed the number received during the year. The Department will continue providing technical assistance and training. Training will focus on counseling and complaints resolution. At least ten training sessions will be offered to bureau EO staff and Alternate EO Officers.

Affirmative Employment Program (AEP)

During FY 1989, the Office completed and distributed a special study on Employment Facts for 1988 which provided a range of employment facts from total employment to occupations and grades broken down by race, national origin, and sex; developed and provided a briefing package for Assistant Secretaries which included graphical facts by race, national origin, and sex, according to employment profiles of bureaus and offices and arranged by

Program Assistant Secretary; completed and submitted the 1988 AEP Accomplishment and Update Report to the EEOC; issued initial instructions and structured formats to bureaus and offices for reporting Quarterly Federal employment and the employment activities and profiles of their concessionaires; and provided requirements and procedures for establishing a Department-wide Applicant Flow Data System and provided consultation and review prior to official Personnel Bulletin issuance.

Cultural awareness observances in recognition of Black History Month, Hispanic Heritage Week, Federal Women's Week, American Indian Day, and Asian/Pacific American Week will be coordinated for FY 1990.

During FY 1989, the Office fulfilled all reporting requirements to the EEOC; provided EEO status reports to managers and supervisors including summaries of findings from program evaluations, assessments, and special studies; developed and executed AEP training modules for managers and supervisors; developed models for management of AEP at major organizational levels and sub-organizational levels within the Department of the Interior; and coordinated with the bureaus on Special Emphasis activities and programs. Procedures for implementing, evaluating and reporting results for a Departmentwide Applicant Flow Data System were planned for completion and adoption during the fiscal year. Correlation studies were planned involving employment and discrimination complaints trends.

For FY 1990, the Office will continue to fulfill reporting requirements to the EEOC; monitor and provide periodic status reports to managers on progress involving AEP plans; refine the Departmentwide Applicant Flow System to improve/maintain effectiveness and assure assessments are conducted at major organizational levels; narrow focus of some special studies and assessments to major, mission-oriented occupational series to enhance strategies for work force improvement; explore uniform reestablishment of exit interviews and other feedback mechanisms to improve retention of minority and women employees, especially in occupations and categories with low representation; and continue coordination with bureaus and offices on Special Employment and Special Emphasis programs and activities.

For FY 1991, the Office plans to continue fulfilling reporting requirements to the EEOC; fully implement a uniform Department-wide system or Quarterly Analysis/Assessment of Equal Opportunity Data with summary reports to the Secretary; refine and standardize a Departmentwide reporting system on employment activities and work force profiles for concessionaires; continue the narrow focus on special employment studies and correlations to identify problems and barriers; and supplement Federal Equal Opportunity Recruitment

Program activities, guides, and modules for training EEO officials and program designees in bureaus and offices regarding planning, implementing, assessing/evaluating, and updating an effective Affirmative Employment Program.

Federal Financial Assistance Programs

The Federal Financial Assistance Programs Staff is responsible for the development and implementation of policies and programs designed to assure that no person in the United States is subject to discrimination on the grounds of race, color, national origin, age, handicap or sex in any program or activity that benefits or receives Federal financial assistance from the Department.

The most important objectives of the Staff's compliance and enforcement program consist of the following:

Develop and promulgate policies, regulations, and guidelines to ensure compliance and enforce Federal civil rights laws;

Acknowledge and provide for prompt investigation of civil rights complaints filed under Title VI of the Civil Rights Act of 1964, Title XI of the Education Amendments of 1972, the Age Discrimination Act of 1975, and section 504 of the Rehabilitation Act of 1973, as amended;

Provide technical assistance to bureaus and offices of the Department, and recipients and applicants of assistance to enable them to comply fully with applicable laws; and

Continue oversight of bureaus and offices and ensure the conduct of compliance reviews of recipient, subrecipient, and applicant policies and practices to determine civil rights compliance.

In FY 1989, the Federal Financial Assistance Programs Staff successfully developed, coordinated, directed, and provided civil rights training and technical assistance to the newly decentralized compliance review and complaint investigatory programs of the U.S. Fish and Wildlife Service (FWS) and the National Park Service (NPS). As a result of this pilot project, in FY 1989 a total of 4,290 civil rights compliance reviews were conducted of federally-assisted wildlife, park and recreation programs. The Staff processed a total of 86 complaints and honored over 151 public inquiries regarding the Department's civil rights policies; a compliance and enforcement coordination agreement between DOI and the Department of Education was drafted to ensure maximum coordination between these agencies in ensuring civil rights compliance in federally-assisted public school programs; a final regulation to implement the Age Discrimination Act was developed and published in the Federal Register; and a draft proposed rule to implement Title IX of the Education Amendments was completed and submitted to the Department of Justice and the U.S. Equal Employment Opportunity Commission for pre-publication clearance purposes. A proposed rule was developed and published to amend DOI's Section 504 regulations among other concerns to conform with the Uniform Accessibility standards.

Over 6,000 self-evaluation plans and 300 hundred transition plans required by enforcement of the Department's regulation implementing Section 504 for Federally conducted programs and activities were prepared during FY 1989. Twelve complaints were processed. Ten onsite assessments and verifications of self-evaluation plans and transition plans will be conducted in ten bureaus in FY 1990 and FY 1991 in diverse geographical locations.

During FY 1989, the OEO followed up on the recommendations made in 27 management reviews of the EEO and civil rights programs in eight of the Department's bureaus. The reviews utilized desk audits and on-site reviews. Ten reviews covering ten bureaus are planned for FY 1991.

The FY 1990 and FY 1991 programs provide for the following: (a) a final regulation amending DOI's Section 504 regulations for federally assisted programs, and a proposed Title IX regulation, will be developed and published; (b) the Staff will continue to broaden the coverage of civil rights enforcement into other covered Federal assistance programs and activities of the Department which heretofore have never been evaluated for civil rights compliance purposes; (c) to minimize duplicative compliance requirements and paperwork an appropriate coordination agreement will be developed with the Department of Education for ensuring civil rights compliance in the Department's Federally-assisted higher, secondary and elementary education programs; (d) completion of the reviews of all self-evaluation and transition plans prepared covering all of the Department's activities and programs; (e) an estimated fifteen complaints filed under Section 504 for Federally-conducted programs and activities will be processed each year; (f) approximately 75 civil rights complaints will be processed each year against recipients of Federal financial assistance; (g) the Staff will provide civil rights training and technical assistance to components of the NPS, FWS and Bureau of Indian Affairs (BIA); (h) compliance reviews will be conducted as necessary; (i) technical assistance will be provided to recipients; (j) continuous oversight and periodic monitoring will be conducted of the NPS' and FWS' policies and practices in ensuring nondiscrimination in Federal-assisted programs; (k) public notification efforts will be substantially enhanced relative to apprizing the public of DOI's civil rights and nondiscrimination policies in

Federal assistance programs; and (1) technical assistance on the implementation of section 504 for Federally conducted programs and activities will be provided as needed to Commonwealths, International Commissions, and other jurisdictions which receive funds from the Department.

Follow-up to the Departmentwide Accessibility Conference was conducted for Section 504 coordinators from throughout the Department in FY 1989, which was attended by over 125 people, including representatives from other Federal agencies and State governments.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,447	1,497	50
(FTE-T)	28	29	1

Funding of $50,000 is requested to support an additional position and related expenses. OEO previously had an organizational structure with a Deputy Assistant Director. Through attrition and as a result of reductions in resources, this position was not filled. There is an urgent need for an additional manager to fill the gap that currently exists between the OEO Director and the Staff Managers. Under the current structure, the OEO Director must devote an inordinate amount of time away from management activities to provide for first-line staff supervision and leadership and by being involved in routine technical work.

In addition to assisting the OEO Director in overall management of the Office, this person would assume responsibility for managing the development, implementation and coordination of the Departmental Affirmative Employment efforts to remove barriers in employment and seek innovative mechanisms to recruit, hire and provide advancement opportunities for minorities and women as specified by the Secretary in his Equal Opportunity and Stewardship messages.

Nonfunding of this increase will result in limiting the OEO Director's time to management of line staff in lieu of developing and implementing management improvement items and providing the leadership which will influence innovative program initiatives in support of the Secretary's Stewardship agenda.

Distribution of change by object class:

The object class detail for the proposed increase of $50,000 and one workyear is as follows:

Object Class	FTE	Amount
Personnel compensation	1	$42,000
Personnel benefits		6,000
Printing and reproduction		1,000
Other services		1,000
Total	1	$50,000

Justification of Program and Performance

Subactivity: Office of Public Affairs

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	882	870	921	921	0
(FTE-T)	16	16	16	16	0

Objectives: The Office of Public Affairs' (OPA) primary objective is to provide accurate and timely information about Interior activities and programs to the public and exercise management oversight over all publications and audiovisual material produced by the bureaus for the public.

Base Program: OPA coordinates the planning, production and strategy of all major news announcements and initiatives of the Department and is responsible for a wide range of specific information activities such as news release preparation and distribution, Departmental publication and audiovisual management for popular, interpretive, scientific and technical materials, press conferences, daily liaison with news media, general information correspondence, and preparation of briefing materials and special articles. In addition, the office handles thousands of inquiries by mail, telephone and in person annually, and serves as the public's initial contact on Freedom of Information requests and maintains records of all major Departmental actions. To maintain acceptable information services to meet a high level of public interest within budget and staff restraints, OPA will continue in 1990 and 1991 to streamline its operations and emphasize cost-effectiveness in the design and implementation of information activities.

Projected activities seek to achieve efficiencies in OPA's program which include focusing on closer review and oversight of Departmental publication and audiovisual materials and the elimination of duplicative or nonessential materials, equipment and facilities from the inventory. In 1989, OPA exercised such oversight on over $23 million in publications and $2 million in audiovisual materials and ensured compliance with the Office of Management and Budget and Joint Committee on Printing guidance governing the production of these items. This oversight of proposed bureau expenditures resulted in identifying and reducing unnecessary or excessive costs for production, revision of several proposed publications which were inappropriate because of tone or policy, and denial of approval of several proposed periodicals and audiovisual productions because they were not essential to the mission of the agency, or were too costly. In 1990 and 1991, OPA will continue to promote appropriate consolidation and greater sharing of facilities and production resources among bureaus.

Continued emphasis will be placed on analysis of all Departmental public affairs initiatives to ensure stringent cost and quality controls as well as development of only high priority material. This screening detects omission of various important audiences identified in outreach efforts, identifies and halts overly ambitious or costly campaigns, and ensures that Interior policies on the sale (as opposed to free distribution) of materials (publications, posters, etc.) are carried out. The Department will revise publication and audiovisual management control systems in calendar year 1990 to comply with new OMB requirements. Departmental news releases issued in 1990 and 1991 are expected to number 225 as compared to 200 in 1989.

The office will continue to expand the use of facsimile and electronic dissemination of its news releases through use of commercial firms. OPA also will continue work with other Federal agencies to develop an electronic "news wire" that will carry news releases. Such a service would further enable DOI to reduce costs for delivery and mailing of its news releases and other materials to the news media and constituent organizations.

OPA will heighten attention to ensure efficient use of staff by Interior bureaus in public affairs activities. OPA has authority within the Department to review all personnel actions affecting the public affairs function, before such actions take effect. Over the years this has functioned as cost and quality control factors through avoidance of duplication of effort and overlapping of functions. The Office, in conjunction with bureau officials, is working to ensure more efficient and shared use of writers, press officers, visual information officers, related specialists and facilities to make the fullest use possible of such personnel and related facilities.

No increase in funds is requested for 1991.

Justification of Program and Performance

Subactivity: Small and Disadvantaged Business Utilization

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	425	419	445	445	0
(FTE-T)	7	7	7	7	0

Objectives: The Office of Small and Disadvantaged Business Utilization (OSDBU), was established pursuant to Section 15(k) of the Small Business Act, as amended by Section 211 of Public Law 95-507, dated October 24, 1978, and subsequent Office of Federal Procurement Policy regulations and an Interior Secretarial Order. The Office's overall objective is the implementation and oversight of all policies, regulations and procedures affecting the Department's small business, disadvantaged business, women-owned business and labor surplus area programs. On the basis of Congressionally mandated and Presidentially sanctioned special efforts on behalf of small, disadvantaged, women-owned and labor surplus area businesses, these entities are assisted in gaining a share of the government's procurement expenditures. OSDBU is the catalyst that enables Interior to carry out this responsibility.

In 1990 and 1991, OSDBU will actively participate in intraagency and interagency procurement, Federal assistance, and other policy making activities that impact the target business groups. The Office will establish through negotiations, reasonable goals for the participation of the target businesses in Interior's procurements. Pursuant to the requirements of Executive Order 12432, the Office will establish additional annual goals and develop incentives for the participation of minority business enterprises in subcontracts under grants and cooperative agreements awarded by Interior to its many recipients. Annual Departmental goals will be negotiated with the Small Business Administration (SBA) and the General Services Administration. Although small minority business procurement goals are included in negotiations with SBA, a separate detailed Annual Minority Business Development Plan, which includes goals for awards by Federal assistance recipients to minority businesses, must be submitted to the Minority Business Development Agency (MBDA), Department of Commerce. As a method of increasing opportunities for minority business participation under the requirements of Section 105(f) of P.L. 99-499, the

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, the Office will assist the bureaus in the development of procedures to identify pertinent projects and funding early enough for the effective use of outreach to minority businesses.

OSDBU objectives are accomplished through promoting and facilitating increases in contract awards to the four primary business areas in terms of percentages of total procurement. Procurement results will continue to be measured by data reported by each bureau and office in the Interior Procurement Data System.

Another major OSDBU objective is to provide continued functional guidance and direction to all Interior personnel having responsibility for Business and Economic Development Program (BEDP) implementation. This guidance and direction will be accomplished by the development and implementation of innovative and cost-effective training methods and a more focused effort at communicating and providing oversight to the bureau procurement or program personnel.

Base Program: Much of OSDBU's policy development and implementation, procurement assistance, oversight, and advocacy activities are the result of external requirements which require direct input and follow-up action by the OSDBU staff. Meanwhile, internally planned projects emphasize the development of more efficient and unique ways of utilizing existing program resources.

Examples of externally imposed activities will include, in addition to several that are continuing, the development of strategies which will result in more competitive awards to small, disadvantaged businesses so that they can benefit from the mandates of the Competition in Contracting Act (1984). Some increases have occurred as a result of monitoring the Commerce Business Daily. Substantial planning must now be accomplished in light of the recent enactment of Public Law 100-656 which introduces major Minority Small Business Program Reforms. Among the many changes that will impact OSDBU activities are several key measures; the establishment of statutory goals for small business and for small, disadvantaged business awards; the requirement for executive agencies to prepare and submit to the Small Business Administration annual forecasts of 8(a) procurement opportunities; the introduction of competition within the 8(a) program; the introduction of a procedure which permits pre-award challenges (protests) to the non-selection of an 8(a) firm; and a substantially increased marketing and outreach role for the OSDBU.

As a direct result of the June 15, 1989, enactment of P.L. 101-37, the "Technical Corrections Act", OSDBU will be responsible for the management and oversight of a Department of the Interior Small Business Competitiveness Demonstration

Program. The intent of the Demonstration Program is to measure the competitive capabilities of small businesses in selected industry categories and to evaluate the use of target goals and management techniques designed to expand small business participation in Federal Acquisition Programs. The Demonstration Program has a four-year duration, through December 31, 1992.

Congress' primary objective for passing the new law is to remedy some major flaws in the Small Business Administration (SBA) Section 8(a) program. Recent congressional and SBA studies and investigative findings have uncovered a pattern of misuse and mismanagement of the 8(a) program. In its efforts to remedy these and other problems, the legislation will require Federal procuring agencies to assume a larger role in the promulgation, implementation and oversight of the 8(a) program. The added responsibilities must be assumed by the OSDBU's currently in place in the executive departments and agencies.

Based upon potential versus actual achievements in the business and economic development programs, OSDBU will identify a minimum of three bureau procurement activities for comprehensive on-site program management reviews. We will evaluate policy implementation procedures and practices to determine and recommend remedial action needed to ensure the eventual achievement of full potential in the Business and Economic Development Program. Written review of findings and recommendations will be prepared and submitted to heads of the appropriate bureaus and offices and contractors. Follow-up actions will occur to ensure that recommended corrective actions are taken within a reasonable time after the reviews.

Actual workload indicators for 1989, and estimates for 1990 and 1991 are as follows:

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
Seminars conducted or attended to explain program requirements	11	16	18
Total attendance at sessions	3,400	4,500	4,500
Total publications explaining program requirements	10	12	12
Total distribution of publications	3,800	4,800	4,500
Total vendors interviewed and counseled	2,300	3,500	3,000
Total studies conducted on matters relating to procurement and business and economic development	12	10	10

Total number of regulations required to be initiated, revised, or reviewed	24	30	32
Total number of policy, guidance or training issuances developed, reviewed and/or disseminated	10	60	60
Total pages of correspondence processed	6,000	6,500	6,200
Total routine reports compiled, analyzed and disseminated (internally and externally)..	60	65	68

Since FY 1978, Interior has experienced a steady average increase in contract awards to small and disadvantaged businesses: small business from 41% of total procurement in FY 1979 to a high of 61.9% of total procurement in FY 1988 and a leveling off to 56.6% during FY 1989. Disadvantaged business increased from 10% of total procurement in FY 1979 to a high of 18.6% of total procurement in FY 1987; but leveling off to 9.0% in FY 1989. Awards to firms located in labor surplus areas have risen from $30 million in FY 1979 to a high of $355 million in FY 1988 but leveling off to $217 million in FY 1989. From FY 1979 through FY 1989, awards to businesses owned by women have made substantial increases each year, rising from $4 million in FY 1979 to $29 million in FY 1989.

The following table displays anticipated changes in these areas for FY 1990 and FY 1991:

Contract Awards
(in millions of dollars)

	Accomplishments					
	FY 1989 Actuals		FY 1990 Estimates		FY 1991 Estimates	
Area	Amount	%	Amount	%	Amount	%
Small Business	$668	56.6	$685	55.0	$710	57.0
Disadvantaged Business/ Minority Business	107	9.0	131	10.6	137	11.0
Labor Surplus Area	217	18.4	246	25.0	323	26.0
Women's Business	29	2.5	32	2.6	34	2.7

No increase in funds is requested for 1991.

Justification of Program and Performance

Subactivity: Quality Assurance

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	0	0	0	500	500
(FTE-T)	0	0	0	10	10

Objectives: The Office of Quality Assurance will be responsible for improving Departmental effectiveness of management control activities by monitoring and conducting follow-up activities on the implementation of recommendations for corrective actions which address management problems in Departmental programs, focusing primarily on programs that affect Native Americans.

The Office will consult and coordinate with the Assistant Secretary-Policy, Budget and Administration and affected bureaus on the development of successful management strategies, long range planning, and the implementation of management objectives and improvements, including providing assistance to bureaus from elsewhere within the Department.

Base Program: The Federal Managers Financial Integrity Act, and the associated OMB Circular A-123, require each agency to establish a review process to identify material weaknesses in operations and areas that are vulnerable to fraud and waste. These reviews are the basis for the annual certification by the head of each agency on the adequacy of internal controls. Additionally, each agency is required to make timely decisions on audit recommendations and to correct weaknesses. The 1989 certification by the Secretary was qualified with respect to the operations of the Bureau of Indian Affairs, the Office of Territorial and International Affairs and the National Park Service.

While the program responsibility for managing this system is under the control of the Assistant Secretary-Policy, Budget and Administration, the Under

Secretary has been tasked by the Secretary to support such efforts by directing the Office of Quality Assurance.

This Office will initially monitor the coordination of Departmental policies, issues and initiatives that affect Native Americans. The Office will monitor and conduct follow-up activities on the implementation of management control recommendations and corrective actions addressing program management problems and concerns in the Bureau of Indian Affairs (BIA) and other Departmental programs which impact Native Americans.

The Office will assess Departmental progress in addressing recommendations from the November, 1989 report of the Special Committee on Investigations of the Select Committee on Indian Affairs, U.S. Senate; identify obstacles and/or problems to implementing the recommendations; and provide support to BIA management in developing action plans and implementation strategies. The Office will also assist the bureaus in establishing management priorities, matching bureau resources to priority requirements, facilitating additional resource support for bureaus with an identified need, and insuring management improvement implementation and follow-up.

Increase from 1991 Base:

(dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	0	500	500
FTE-T	0	10	10

Five hundred thousand dollars ($500,000) is being requested for FY 1991 to staff this office with ten positions. The office will report directly to the Under Secretary. Funds totalling $426,000 will be used for salaries and benefits with the remaining funds used for related expenses such as travel, supplies and equipment.

Distribution of change by object class:

The object class detail for the proposed increase of $500,000 and 10 workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	10	$370,000
Personnel benefits		56,000
Travel		20,000
Communications, utilities and miscellaneous charges		10,000
Printing & reproduction		5,000
Other services		20,000
Supplies		4,000
Equipment		15,000
Total	10	$500,000

Justification of Program and Performance

ACTIVITY: PROGRAM DIRECTION AND COORDINATION
Subactivity: Assistant Secretary - Water and Science

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	701	691	730	730	0
(FTE-T)	12	12	12	12	0

Objectives: This Secretarial office provides Departmental policy and overview to the programs of the Bureau of Reclamation, the Geological Survey and the Bureau of Mines. The major objectives of the Water and Science activity are:

To establish policy and direction as the Bureau of Reclamation evolves from a predominantly construction oriented agency to a resource management agency. The Bureau's new emphasis is on wiser use of water assets, on encouraging conservation, and on economically and environmentally sound use of resources. This evolution of the organization and mission will require thoughtful balancing of past accomplishments and future challenges, increased cooperation with States, local water users, and other interested groups, and a willingness to use new approaches to resolve issues;

To enhance research and improve scientific information for decision-making in areas that are focused on high priority national needs such as global change, minerals availability, mine health and safety, geologic and hydrologic hazards, water quality and quantity, and cartographic systems and to encourage the transfer of advanced technology resulting from Government-sponsored research to the private sector;

To encourage the environmentally responsible exploration and development of domestic energy and mineral resources by the private sector in order to reduce our dependency on foreign sources;

To encourage the use of the technical resources of all three Water and Science bureaus to provide support across the Department in the evaluation and management of hazardous materials sites and preservation and rehabilitation of wetlands;

To administer national minerals policy so that mineral supplies are considered fully in evaluating national security and economic policy issues and decisions by developing fundamental analytical tools for minerals policy analysis and by improving the quality of national and international minerals data and the analysis of these data;

To provide accurate and timely information about the quantity and quality of America's ground and surface water, energy and mineral resources that allow the public to act in an informed manner on critical environmental and natural resources issues;

To provide cartographic, geographic, and remote sensing products and services, including basic and special maps, in several scales, digital and cartographic data, remotely sensed data and maps, and cartographic and geographic information, in support of Federal, State and public interests;

To mitigate flood, earthquake, volcano, landslide, and subsidence losses that occur in many parts of the Nation by providing earth science data and evaluations essential for land-use planning, engineering design, and emergency preparedness decisions;

To make scientific advances that enable improved recovery from mineral deposits and greater efficiency of mineral processing systems; to improve minerals industry worker health and safety, and the environmental and economic aspects of producing, using, recycling and disposing of mineral materials; and

To identify and address irrigation-induced water quality problems that might pose current or potential threats to human health or fish and wildlife, while preserving the viability of irrigation activities associated with Departmental constructed, owned or managed irrigation projects.

Programs and Plans: In 1991, the Department will continue to emphasize completing construction projects now substantially under way and developing plans for improving water-resources management, and water conservation, including planning initiatives to implement Reclamation's new mission; continuing a multi-year program to put Bureau of Reclamation operation and maintenance on a regular cycle; implementing and coordinating a Departmental policy on water transfers and marketing; encouraging non-Federal participation in recreational development; assisting the Environmental Protection Agency with Superfund programs and Interior bureaus with hazardous waste problems; continuing the irrigation drainage program initiated in 1986 by coordinating

Departmental efforts at sites where there is potential for harm from irrigation drainage; developing and implementing a global change program based on studies of past climate, hydrologic processes, and sensitive regions, data analysis and maintenance, and analysis of potential impacts; ensuring that national policies strengthen our ability to meet our non-fuel mineral requirements, including those for national security, more fully from domestic sources, thereby reducing our dependence on foreign sources; continuing research by the Bureau of Mines into the science of advanced "high-tech" materials and the effects of the use of these materials upon traditional mineral materials supply and demand; advancing our knowledge about the energy and mineral resources in the Exclusive Economic Zone; completing the U.S. Geological Survey's national water quality assessment pilot studies and beginning the first phase of a full scale national water quality assessment; working with other Federal and State agencies to increase our understanding of ground-water contamination, acid rain, wetlands and other water resource issues; and coordinating the development of a national digital cartographic base and use of advanced digital cartographic systems.

The Water and Science staff provides analyses, evaluations, and coordination to assist the Secretary and the Assistant Secretary in fulfilling their responsibilities in these areas. The staff identifies opportunities for cost effective management of bureau programs to ensure maximum efficient use of appropriated funds and supports the Assistant Secretary in providing policy guidance and direction for the bureaus and in monitoring performance by the bureaus in achieving objectives.

Base Program: The Assistant Secretary - Water and Science and staff including the Secretary's Science Advisor, provide scientific advice to the Secretary; coordinate scientific activities for the Department; have Departmental authority and direct responsibility for management and policy direction with respect to assisting both Federal and non-Federal entities in conserving and developing the nation's water resources; and, in the 17 Western states, direct programs to develop environmentally and economically sound water projects. The base program provides policy direction for the collection and analysis of land, mineral, and water resource data, and related geologic, hydrologic, cartographic and remote sensing, mining, and metallurgical research.

More specifically, the Assistant Secretary and staff undertake numerous activities including the following:

Performing policy reviews and proposing initiatives focused on issues such as: improving the safety of dams including taking responsibility for maintenance and funding of BIA dams; cost-sharing for water projects; enforcing rules and regulations regarding the acreage limitation provisions of Reclamation law; improving the data acquisition and presentation of water and geologic resources; identifying solutions to problems associated with supplies of water and critical non-fuel minerals; improving the minerals information base; coordinating contributions of Interior agencies evaluating potential sites for disposal of radioactive waste; and participating in policy formulation and negotiations concerning settlement of Indian water rights claims;

Participating in the national and international discussions on global change to assure a reasoned response based on solid scientific evidence providing support for Departmental global climate change efforts in support of Administration policy, providing staff for the newly established Interior Council on Global Climate Change and chairing the Council's Working Group on global change research;

Participating in governmentwide deliberations on strategic materials as well as providing information to other agencies; participating with the President's Science Advisor in the Administration's efforts to improve science education; providing staff support for the National Strategic Materials and Minerals Program Advisory Committee; providing liaison to the Federal Commissioners of the Delaware and Susquehanna River Basin Commissions; providing Departmental representation for the National Acid Precipitation Assessment Program and other interagency efforts where Secretarial office level representation is appropriate;

Coordinating the development of wetlands program initiatives to assure that the technical expertise of Water and Science bureaus is applied to this important Administration initiative;

Reviewing operating criteria for Federal water facilities;

Providing administrative support to the Department's National Irrigation Water Quality Program Manager and providing policy guidance as part of the Department's irrigation drainage and hazardous waste policy teams;

Serving on the Department's Water Policy Council, chairing the Working Group on Water Quality and Quantity and providing staff work in each of the Council's Working Groups, including analyses and overviews of Interior involvement in water policy, Indian water rights, water quality, and wetlands;

Providing increased policy-level attention to management controls and audit followup to ensure effective use of funds and improved financial management in response to increased interest in these areas by the Congress and the Administration; and

Conducting reviews of legislative proposals, litigation, contracts, bureau budget requests, inter-agency agreements, reports on internal controls, audits, and other reports, and proposing responses to Congressional and public inquiry mail.

No increase in funds is requested for FY 1991.

Justification of Program and Performance

Subactivity: Assistant Secretary - Land and Minerals Management

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	764	753	801	901	100
(FTE-T)	12	12	12	14	2

Objectives: The Assistant Secretary - Land and Minerals Management is responsible for discharging the duties of the Secretary for programs administered by the Bureau of Land Management (BLM), the Minerals Management Service (MMS), and the Office of Surface Mining Reclamation and Enforcement (OSMRE), pursuant to the Federal Land Policy and Management Act, Outer Continental Shelf (OCS) Leasing Act, and the Surface Mining Control and Reclamation Act (SMCRA) and the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA).

The major 1991 initiatives will be to: support the Secretarial initiatives for volunteerism, Historical Black Colleges and Universities, Small and Disadvantaged Business Utilization, equal employment opportunity, the drug program, and audit and internal controls programs; strengthen state regulatory and reclamation efforts and Federal oversight and regulatory responsibilities under SMCRA; pursue improvements to and enhance operation of the royalty management system; following extensive public review and comment, prepare the final proposed OCS oil and gas program for 1991-1996; pursue new initiatives in fish and wildlife, reporian and recreation management; and continue to pursue new partnerships with the states in managing the public lands.

Additional objectives for the Office in 1991 will be to: continue to give priority to appropriate energy development issues; upgrade ADP capabilities; carry out policy initiatives adopted earlier and make the programs more responsive to public needs; and continue streamlining administrative management. The Land and Minerals Management staff will provide the analyses, evaluation, and coordination required to assist the Secretary and the Assistant Secretary in fulfilling their responsibilities in these areas.

Base Program: The Office is charged with directing Departmental priorities pertaining to: multiple-use management of the surface and mineral resources for 270 million acres of public lands in 28 states; administering mineral leases and supervising mining on public and Indian lands and the mineral estates underlying other Federally administered, State or private ownerships throughout the United States; leasing and management of resources on the OCS and the collection and disbursement of all royalties and mineral revenues from Federal, Indian, and OCS land leases; and controlling adverse effects of coal mining operations and restoring unreclaimed lands that were mined prior to passage of SMCRA.

Increase from 1991 base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	801	901	100
(FTE-T)	12	14	2

The increase of $100,000 is requested to restore the reduction in FY 1990 and will fund two FTEs and related expenses. The benefits which will be derived from this increase are increased staffing to address analysis, evaluation and coordination of increased Departmental emphasis on audit and internal controls; the America the Beautiful and Legacy '99 initiatives; the Bureau of Land Management new initiatives for Fish and Wildlife 2000, Recreation 2000, and BLM's information resource management improvements; and a new Indian initiative from this Office.

Distribution of change by object class:

The object class detail for the proposed increase of $100,000 and two workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation..................	2	$81,000
Personnel benefits..............................		13,000
Travel...		3,000
Printing and reproduction..............		1,000
Other services...		2,000
Total	2	$100,000

Justification of Program and Performance

Subactivity: Assistant Secretary - Fish and Wildlife and Parks

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	621	612	668	718	50
(FTE-T)	11	11	11	12	1

Objectives: This Office provides overall policy direction to the National Park Service and the U.S. Fish and Wildlife Service. The Assistant Secretary provides policy direction on the wise application of conservation measures in a complex, ever-changing political, economic, and social environment. The objective is to ensure conservation of nationally significant natural, cultural, and biological resources. The Assistant Secretary will direct a number of initiatives to accomplish this objective including:

Improving the health, safety, and living conditions for park and refuge visitors and employees;

Encouraging private/public sector partnerships and, as appropriate, volunteerism, to provide more economical facilities for visitor use, to enhance park and refuge operations and goals, and to initiate nationwide education programs;

Effectively protecting resources through quality park and refuge operations and research, with an emphasis on protecting wetlands and providing urban recreation enhancement;

Enhancing maintenance and rehabilitation needs of existing parks and refuges;

Enhancing wildlife resources by implementing the North American Waterfowl Management Plan;

Ensuring that efforts to expand recreation opportunities are economically efficient and well-managed;

OFFICE OF THE SECRETARY
SALARIES AND EXPENSES
ACTIVITY SUMMARY

(Dollar Amounts in Thousands)

	FY 1989 Actual	1990 Approp. Enacted	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) from Base
ACTIVITY: PROGRAM DIRECTION & COORDINATION						
Subactivities:						
A/S-WATER & SCIENCE	622	701	691	730	730	0
A/S-LAND & MINERALS MGMT	822	764	753	801	901	100
A/S-FISH & WILDLIFE & PARKS	664	621	612	668	718	50
A/S-INDIAN AFFAIRS	581	674	665	706	706	0
A/S-TERR & INT'L AFFAIRS	476	557	549	595	595	0
A/S-POLICY, BUD & ADMIN	887	800	789	839	939	100
Total, Prog. Direction & Coord	4,052	4,117	4,059	4,339	4,589	250

Providing overall guidance to historic preservation and archaeological protection programs, including outside and affiliated organizations;

Promoting research activities to assess impacts of global change on wildlife, habitat, parks, and cultural resources;

Ensuring that land acquisition is pursued according to a rational plan and acquisition criteria; and

Providing oversight of international issues relating to wildlife enhancement and park values.

Base Program: This Office has the lead responsibility within the Federal Government for ensuring conservation and use of natural and cultural resources and the enhancement and protection of fish, wildlife, vegetation and habitat.

This responsibility entails a careful balancing of differing needs and viewpoints. Professional judgments and objective data produced by agency staff are often inconclusive in resolving these differences. When such conflicts arise, each party cites data supporting its position. The Assistant Secretary attempts to resolve such differences and develop a policy or course of action that bridges bureau, Department, and other agency concerns and is reflective of Administration goals. The Assistant Secretary's decisions are guided by administration direction, as well as Congressional enactments, such as the National Park Service's Organic Act and the Refuge Administration Act. This Office must weigh these competing demands, make judgments about the accuracy of data from a number of sources, consider the recommendations of qualified resource professionals, and reach decisions which best reflect the public interest.

The Office is responsible for ensuring that protection and use of these resources is furthered by development and implementation of policies which allow the public to use their national parks and refuge lands while preventing such use from causing significant adverse impacts. This Office works to protect resources under its stewardship from unwarranted impacts not associated with their public use. It will continue to work toward enhanced cooperation and coordination among government agencies, State and local governments, and the private sector in order to avoid impacts on park resources from external activities.

In addition, this Office is engaged in efforts to increase bureau management efficiency and uses the management-by-objective system to track the bureaus' progress on major issues and policies of Secretarial concern.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	668	718	50
FTE-T	11	12	1

The escalation of environmental and public support issues requiring increased analysis and review of Legislative and Executive Branch strategies and impact documents, as well as responding to the public, means additional staff resources are necessary at least at the level available in FY 1989. This Office is currently responsible for over 40% of the controlled mail in the Department and 70% of the total correspondence.

Examples of significant continuing issues include global change, spotted owl, Alaska Wilderness recommendations, Alaska Oil Spill Restoration Plan, African elephant, wetlands loss goals, revision of regulations governing non-Federal oil and gas development within park units, transfer of Presidio, subsistence fishing in Glacier Bay, Land and Water Conservation Fund priorities, etc. Such efforts will assume additional importance and publicity due to the Administration's position on stressing the need to address environmental issues. This Office also has a prominent role in the America the Beautiful and Legacy '99 programs. It is also being tasked with closer monitoring of administrative and program actions in the bureaus that can impact effective management and efficient use of resources (e.g., tracking and resolving conflicts related to GAO and Inspector General audit recommendations, internal control and corrective action linkage to budget, support and review of quality control and productivity improvement initiatives, etc.). This increase will provide minimal staff resources to respond to all of these increased demands.

Distribution of change by object class:

The object class detail for the proposed increase of $50,000 and one workyear is as follows:

Object Class	FTE-T	Amount
Personnel compensation	1	$43,000
Personnel benefits		5,000
Travel		2,000
Total	1	$50,000

Justification of Program and Performance

Subactivity: Assistant Secretary - Indian Affairs

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	674	665	706	706	0
(FTE-T)	12	12	12	12	0

Objectives: The Office of the Assistant Secretary - Indian Affairs has the responsibility to provide policy direction for Indian Affairs activities; to provide timely advice to the Secretary on matters pertaining to or affecting Indian Affairs activities; to initiate actions leading to correction of deficiencies identified by internal and/or external review of the Bureau of Indian Affairs; to insure identification, analysis, and resolution of critical issues; and to provide capability for planning, evaluation, and oversight of Indian Affairs activities. During FY 1990, the Office of the Assistant Secretary will oversee the establishment of the Indian Gaming Commission which is independent of the Bureau of Indian Affairs.

The FY 1991 budget will continue to address the persistent economic and social problems on reservations and to improve self-determination for Native Americans. Major priorities will include improved provision of education, economic development opportunity, social services, and information services.

Major initiatives for Indian Affairs in fiscal year 1991 include:

Education - The Bureau is proposing a long-range goal for Indian education to raise additional achievement levels of Indian students in BIA-funded schools to levels that meet or exceed national norms by the year 2000. Towards this goal, the Bureau will continue its implementation of the Effective Schools program, and is requesting increases for a parental and child development program, and a teacher training and orientation program. To continue implementation of the Indian Education Amendments of 1988, the bureau is requesting additional funds for the second increment of a three-year phased increase in salaries for teachers and counselors to the rates paid by the Department of Defense. The budget also includes funds for Administrative Cost Grants. The budget maintains the increased support provided in FY 1990 for gifted and talented students and provides an increase for handicapped children who are educated in an institutional setting.

Social Services - To address the problems of child abuse and neglect, the bureau is requesting increased funding for social services staffing and staff to operate the halfway houses and emergency shelters that are being constructed, as well as funds to equip and operate juvenile detention centers, which are being constructed.

Economic Development - To promote economic development opportunities, the bureau is proposing to continue the Economic Development Grant Program at the FY 1990 level. This program encourages non-Federal matching investments to initiate business development of tribal resources and expand private sector development on reservations, and thus reduce tribal dependence on the Federal Government. Initial funding is requested to implement a bond guaranty program which will complement the existing programs for grants, direct loans, and guaranteed loans.

Self-Determination - To carry out the provisions of the 1988 amendments to the Indian Education and Self-Determination Act, the bureau is requesting increased funding to provide grants to tribes which will enable then to obtain technical assistance to provide the administration and programmatic structure essential to assume the direction and operation of bureau-funded programs. Increased resources are also included to meet the indirect costs associated with self-determination contracts.

Natural Resources Development - To enhance the productivity of forest and agriculture lands, increased funds are provided for reforestation and silviculture treatment; for the eradication of noxious weeds; and for range management programs to reduce and control prairie dogs.

Program Management - To better ensure that available funds are being effectively used and that internal controls are in place and sufficient to detect potentials for fraud or abuse, an Office of Audit and Evaluation will be established to provide independent programmatic and financial review of all Bureau activities at central, area, and agency office locations.

Trust Fund Management - To improve the management of more than $1.7 billion of funds held in trust for Indian tribes and individuals, the bureau has entered into a five-year contract which is expected to result in major improvements, such as a fully automated accounting system which supports daily accrual interest earnings; professional advisory services for a new investment portfolio management system which will offer tribes more flexible investment options; improved collection and disbursement services, which will increase earnings; and automated audit and internal control services. In addition, funds are requested to staff and support the office of the Director for Trust Funds

Management. This new office will consolidate the bureau's trust responsibilities for investing, overseeing and accounting for the trust funds.

Construction - The bureau proposes to undertake one new school construction project and to complete construction of the Pine Ridge High School Project in South Dakota. The Dunseith Elementary School Project in North Dakota will provide a new school building for students in grades K through 6, which will alleviate overcrowded, hazardous conditions.

Base Program: This Secretarial office provides Departmental policy and overview to the programs of the Bureau of Indian Affairs and the Indian Gaming Commission. The primary responsibilities of the Assistant Secretary - Indian Affairs are to serve as advisor to the Secretary on Indian Affairs issues, to act as the Secretarial level policy and operational leader for the Bureau of Indian Affairs, and the lead official for providing coordination and liaison with the Executive and Legislative branches of government on Indian matters.

In order to fulfill these responsibilities, the issues and matters requiring Secretarial decision must be investigated, analyzed, and fully documented; concise recommendations must be presented to the Secretary for action; policy planning must be initiated; program planning in the areas of program and financial management, budget and other administrative operations must be closely monitored and evaluated; and corrective action must be taken as required.

Coordination of trust issues continues with other bureaus in the Department, which has been effective in terms of addressing water issues. Approximately 50 tribes are actively negotiating water claims.

No increase in funds is requested for FY 1991.

Justification of Program and Performance

Subactivity: Assistant Secretary - Territorial and International Affairs

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	557	549	595	595	0
(FTE-T)	7	7	7	7	0

Objectives: Secretarial Order 3046 of February 14, 1980, established the Office of the Assistant Secretary - Territorial and International Affairs to: strengthen the United States' fundamental commitment to encourage self-determined political, economic and social development of the emerging Micronesian governments and the U.S. territories; advocate a more favorable treatment of the territories with regard to Federal grant programs; provide oversight of technical assistance activities in the areas of economic, financial management and technical development of the territories and Trust Territory of the Pacific Islands; and direct and coordinate the Office of Territorial and International Affairs and the Department's International Affairs staff.

Base Program: The Assistant Secretary - Territorial and International Affairs discharges the duties of the Secretary with regard to the administration of laws, functions, responsibilities and authorities related to territorial and Trust Territory matters, as well as financial and administrative matters involving the new freely associated states in Micronesia, which are vested in the Secretary by the President and the Congress. Also, the Assistant Secretary discharges the duties of the Secretary with the authority and direct responsibility for the analysis, development, and review of Departmental policy and programs pertaining to international activities.

The Assistant Secretary - Territorial and International Affairs promotes the economic, social and political development of the territories, leading each of them toward greater self government. Activities are carried out in close coordination with the defense and foreign policies of the United States.

The Assistant Secretary is responsible for the overall direction of territorial policy development; implementation of a technical assistance program in the areas of economic, social, and financial management development; direction of the International Affairs staff of the Department and coordination of Federal programs and services in the freely associated states; and coordination of the activities related to the remaining Trusteeship in Micronesia.

The Office of the Assistant Secretary has been particularly involved in implementing a program that encourages increased economic development through diversification; the shifting of governmental functions to the private sector; decreasing the size of governments; and promoting operating efficiency in the U.S. Territories and the emerging Micronesian governments. In addition to economic development initiatives, technical assistance efforts have emphasized improving financial management, tax policy and administration, procurement policy and procedures, health care, public safety and proper maintenance of infrastructure.

During 1990 and 1991, the Assistant Secretary's Office will continue its efforts on defining issues relative to meeting trusteeship responsibilities for the Republic of Palau and preparing them for transition to the status of free association.

Regarding the U.S. territories, the Assistant Secretary and staff will continue to focus on finding new ways to increase the economic development potential of the territories, and identifying and implementing solutions to problems in the areas of fiscal control, resource management and proper maintenance of infrastructure. The Assistant Secretary will also focus on improving the Federal/territorial relationship and resolving political status issues.

With enactment of the Compact of Free Association for three of the Micronesian governments and implementation for two of the three, the Office of the Assistant Secretary has been heavily involved in administering Federal funds and programs for these governments in their new free association status. The continued orderly transition of the Freely Associated States to their new political status and resolution of all related outstanding issues during the transition period will continue to be a major responsibility of the Assistant Secretary in FY 1991.

This Secretarial office, with seven full-time equivalent workyears of effort, issues policy guidance and provides oversight to the programs of the Office of Territorial and International Affairs.

No increase in funds is requested for FY 1991.

Justification of Program and Performance

Subactivity: Assistant Secretary - Policy, Budget and Administration

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	800	789	839	939	100
(FTE-T)	11	11	11	13	2

Objectives: The Assistant Secretary - Policy, Budget and Administration is responsible for and provides detailed and objective advice on program planning, budget, management, and policy matters including developing goals and policies, allocating resources to meet these goals and policies, and recommending corrective action, as necessary, to modify goals or objectives, to decrease or increase resource use, and to change implementation methods within the Department.

Responsibilities include the development and implementation of administrative policy, standards, objectives and procedures for use throughout the Department.

Base Program: The Office of the Assistant Secretary - Policy, Budget and Administration discharges the duties of the Secretary for all phases of management and administrative activities and serves as the designated agency ethics official for the Department.

This Office advises the Secretary on programs which require Secretarial attention because of their national concern, budgetary significance, legislative requirements, precedent setting nature, or because the issues and activities involved cross between bureau or office lines. The Assistant Secretary is responsible for assuring appropriate implementation of established policy within the Department's budget development process, Departmental compliance with the National Environmental Policy Act and for providing financial management, budget, personnel, management and administrative support services for the Office of the Secretary. The Office also serves as the Designated Agency Official with Departmental responsibility on matters such as ethics, information resources management, and the Freedom of Information Act.

In 1990 and 1991 the Office will continue to place emphasis on addressing the Administration's commitment to improved management. These efforts reflect support of the Administration's efforts to spend resources more efficiently while maintaining the integrity of essential programs. Priorities in FY 1991 include improving management of Native American programs throughout the Department, requiring the use of additional automated technology to improve program delivery and efficiency, enhanced overall direction of hazardous materials management programs, continuing to improve the Department's payroll, procurement, and accounting systems, improved audit follow-up and implementation of changes to ethics statutes and regulations, and increasing involvement of employees at all levels of the organization in productivity improvement with increased emphasis on total quality management.

Increase from 1991 Base:

	FY 1991 Base	FY 1991 Estimate	Difference
$	839	939	100
(FTE-T)	11	13	2

The role of this office, as compared to the previous Administration, has been enhanced as directed by the new Secretary. Functionally, the Assistant Secretary has assumed additional responsibilities in regard to the overall day-to-day management of the entire Department, and, as a result, requires additional resources. The requested increase of $100,000 and two workyears will restore the resource reduction imposed in FY 1990 and will allow the office to more effectively operate and manage its responsibilities in supporting Secretarial policies and initiatives.

Distribution of change by object class:

The object class detail for the proposed increase of $100,000 and two workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	2	$82,000
Personnel benefits		12,000
Travel		2,000
Printing		1,000
Other services		3,000
Total	2	$100,000

Justification of Program and Performance

Activity: POLICY, BUDGET AND ADMINISTRATION
Subactivity: Environmental Project Review

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	2,373	2,340	2,449	3,549	1,100
(FTE-T)	33	33	33	38	5

Objectives: This Office provides Departmentwide oversight for environmental quality in natural resources management. One of its main responsibilities is to provide guidance and technical assistance in meeting the Department's responsibilities under the National Environmental Policy Act of 1969, as amended (NEPA); Executive Orders 11514, as amended by 11991 (Environmental Protection and Enhancement), 11988 (Floodplain Management), and 11990 (Wetlands Protection); and the Coastal Zone Management Act (CZMA). The Office also manages the Department's review of such non-Interior proposals as Corps of Engineers water projects, Department of Transportation highway and airport projects, Federal Energy Regulatory Commission hydroelectric projects, Nuclear Regulatory Commission nuclear plants, Department of Energy radioactive waste repositories, and Environmental Protection Agency pollution control regulations.

In addition, this Office is responsible for oversight of the Department's compliance with the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA), and various other Federal statutes pertaining to noise, radiation, pesticides, and toxic substances. This includes oversight of the Department's compliance with the Comprehensive Environmental Response, Compensation and Liability Act and Superfund Amendments Reauthorization Act (CERCLA/SARA) and other statutes for the cleanup of hazardous substances sites at Interior facilities and on lands administered by the Department.

The Office also manages the Department's emergency preparedness program for response to natural and technological hazards. In this regard it supervises the Department's participation in contingency planning, response activities, enforcement support and training exercises at the headquarters and regional levels, as well as providing natural resources trustee guidance for those resources under Interior's trusteeship pursuant to CERCLA/SARA and Section 311 of the Clean Water Act. As a part of its response activities it represents the Department in the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), the Federal Radiological Emergency Response Plan (FRERP), and other response plans for natural and technological hazards on national and regional response teams.

In accordance with the provisions of CERCLA/SARA, E.O. 12580, and the NCP, the Office administers the Superfund regulations for assessing damages to natural resources for use by Federal and State natural resources trustees and Indian tribes. Its responsibilities include conducting the biannual update and revision of the regulations called for by CERCLA/SARA, expanding the simplified (Type A) regulations to cover a wider range of hazardous substances and potentially affected environments, and providing expert advice and guidance to Federal, State and Indian trustees.

The staff is composed of experts from various natural resources and environmental disciplines who review the environmental consequences of Departmental and other agency actions to ensure that the full and balanced interests of the Department are considered. The Office assists all bureaus of the Department and particularly provides technical environmental advice to Assistant Secretaries and the Office of the Secretary. Regional environmental officers provide assistance to bureaus, other Federal agencies, and state and local agencies in nine field locations, and represent the Department on regional response teams for oil spills, hazardous substance releases, radiological accidents and other natural and technological incidents.

Base Program: The base program will provide for conduct of the following activities:

Provide guidance and oversight of compliance with NEPA and CZMA;

Coordinate the establishment of Departmentwide priorities for cleaning up hazardous waste sites and oversee interbureau cleanup activities in accordance with the priority list;

Track compliance by Interior facilities with pollution control requirements and compile semiannual pollution abatement reports pursuant to OMB Circular A-106;

OFFICE OF THE SECRETARY
SALARIES AND EXPENSES
ACTIVITY SUMMARY

(Dollar Amounts in Thousands)

	FY 1989 Actual	1990 Approp. Enacted	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) from Base
ACTIVITY: POLICY, BUDGET & ADMINISTRATION						
Subactivities:						
ENVIRON PROJ REVIEW..................	1,998	2,373	2,340	2,449	3,549	1,100
ACQUIS & PROP MGMT...................	1,286	1,282	1,264	1,346	2,096	750
PERSONNEL............................	1,730	1,869	1,843	1,956	1,833	(123)
ADMINISTRATIVE SERVICES..............	891	933	920	974	1,154	180
LIBRARY SERVICES.....................	1,354	1,405	1,385	1,441	1,441	0
INFO RESOURCES MGMT..................	2,223	2,262	2,230	2,352	2,352	0
MANAGEMENT IMPROVEMENT...............	1,129	1,191	1,174	1,247	2,167	920
PROGRAM ANALYSIS.....................	1,764	1,816	1,791	1,936	2,766	830
BUDGET...............................	1,857	1,957	1,930	2,049	2,049	0
FINANCIAL MANAGEMENT.................	1,054	1,162	1,146	1,218	1,468	250
SECURITY AND DRUG ENFORCEMENT........	528	667	658	709	759	50
Total, Policy, Budget & Admin........	15,814	16,917	16,681	17,677	21,634	3,957

Manage environmental reviews of project proposals and reports and provide technical assistance to non-Interior entities for proposals with multi-bureau involvements;

Review policy, legislative, budget, and regulatory proposals to determine environmental consequences and prepare Departmental recommendations on them;

Manage review of non-Interior environmental regulations;

Provide Departmental direction at both headquarters and regional levels for contingency planning and response activities pursuant to the NCP for oil spills and hazardous substances releases, the FRERP for peace-time radiological incidents, and other interagency procedures for such natural disasters as floods, hurricanes, and earthquakes;

Provide Departmental direction at the regional level for national security emergency preparedness activities in cooperation with the Division of Security and Drug Enforcement;

Provide guidance to bureaus about Superfund natural resources trust responsibilities and manage the Department's conduct of preliminary natural resources surveys of damages from oil spills and hazardous substances releases at sites on the National Priorities List (NPL); and

Establish and maintain a capability to assess damages to natural resources pursuant to CERCLA and E.O. 12580, and administer the Superfund damage assessment regulations.

Workload measures are as follows:

	Actual FY 1989	Estimate FY 1990	Estimate FY 1991
Interior draft EIS	60	60	60
Interior final EIS	70	70	70
Non-Interior projects	1,200	1,200	1,200
Non-Interior regulations	75	75	75
Pesticide proposals	207	200	200

Emergency response incidents	180	180	180
Preliminary Natural Resources Surveys	180	190	200
CERCLA/SARA settlement agreements	15	20	25
CERCLA/SARA technical assistance actions (docket sites)	0	10	30
Damage assessment outreach meetings	10	8	10

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	2,449	3,549	1,100
(FTE-T)	33	38	5

A total of $900,000 of the requested increase will be used to augment the Department's efforts to respond to hazardous materials management problems and oil spills.

In FY 1990, the Department established a new Division of Hazardous Materials Management within the Office of Environmental Project Review. The functions of this new Division are as follows: establishment of a hazard ranking system to set Departmentwide priorities for the remediation of hazardous waste sites; oversight of bureau hazardous materials activities to ensure that they are conducted in the most effective and efficient manner and that they are in compliance with the Departmental priority list; tracking progress of remedial actions on Interior hazardous waste sites; reporting on hazardous materials program status to EPA, OMB and the Congress; coordination of technical assistance support by bureaus with requisite expertise to bureaus facing remediation requirements; and provision of guidance and support to bureaus in the areas of CERCLA/SARA, RCRA, underground storage tanks, and other hazardous materials management problems.

To date, the Department has identified 303 sites that are listed or proposed for listing on the Federal Agency Hazardous Waste Compliance Docket. It is anticipated that additional sites will be added to the list in the future as ongoing inventory actions continue.

The requested funding would allow the Department to accelerate the movement of Interior sites through the cleanup phases. The proposed expansion of the central coordination role of the Office of Environmental Project Review in the area of site remediation will allow the Department to facilitate cross-fertilization of expertise within the Department and enable Interior to focus limited resources on the most critical problems first so that the best attainable return on investment in terms of hazard reduction is realized. In addition, a portion of the resources will be used to augment the efforts of the Natural Resources Trust and Response Division in the areas of oil spill response coordination and spill incident information management.

A total of $200,000 of the requested increase will be directed toward the acceleration of the development of the Department's natural resources damage assessment regulations.

A recent court order creates a new priority for this office's activities in implementing requirements under Superfund to develop and maintain regulations for assessing natural resource damages when injury has resulted from oil spills or hazardous substance releases. (Current authority includes CERCLA/SARA (Superfund), the Clean Water Act, Executive Order 12580, and Secretarial Order 3120.)

The requested resources would accelerate the Department's efforts to make changes to the regulations as ordered by the court. By law, there are two parts to the Department's rule, Type A and Type B, and the law requires that they be reviewed and revised as needed every two years. Contract support expenditures will be applied primarily to development of the Type A rule, a computer program containing the simplified regulations for small spills. At present, these rules cover only coastal and nearshore marine environments. The court upheld the approach and procedures, but its order calls for a significant change in a portion of the data base for the computer model. At this time, we are at work to expand the coverage of the rule to cover the Great Lakes coastal and aquatic environments, including revisions to the contract work order in line with the court's decision. Eventually the rule will cover flowing water and terrestrial environments, and interactive ways of linking the available models.

The requested funding is important to help the Department to meet its responsibilities under the law, and under the recent, widely publicized court order.

Distribution of change by object class:

The object class detail for the proposed increase of $1,100,000 and five workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	5	$263,000
Personnel benefits		37,000
Travel		12,000
Printing		2,000
Other services		768,000
Supplies		3,000
Equipment		15,000
Total	5	$1,100,000

Justification of Program and Performance

Subactivity: Acquisition and Property Management

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,282	1,264	1,346	2,096	750
(FTE-T)	19	19	19	22	3

Objectives: The Office of Acquisition and Property Management assists the bureaus and offices of the Department and exercises Departmentwide authority and oversight of acquisition (procurement) and Federal assistance (grants and cooperative agreements) management; real and personal property management (including energy conservation and quarters management), and motor vehicle fleet management. This is accomplished through frequent staff to staff consultations, issuance of policy and procedures, review of activities, establishment and management of Departmentwide procurement and property systems, and collection and analysis of appropriate data. The management initiatives undertaken in these areas are aimed at reducing costs, improving management accountability, and reducing opportunities for fraud and other abuse.

The Office is the focal point for coordinating development of Departmentwide policy and procedures and for completing reports and answering inquiries regarding the activities for which the office has oversight. The Office serves as the Department's liaison with Office of Management and Budget, including the Office of Federal Procurement Policy (OFPP), General Services Administration, General Accounting Office and other Federal agencies in subject areas.

Significant 1991 Objectives are to:

- Provide timely, high quality technical assistance to bureaus in matters relating to acquisition, Federal assistance, real and personal property, energy conservation, and motor vehicle fleet management;

- Oversee the acquisition and property management review processes of the bureaus and offices to ensure that the programs are effectively conducted;

- Conduct program reviews and provide oversight of bureau procurement and property management programs to ensure compliance with Departmental, GSA, and OMB guidance such as OMB Circulars A-45, A-50, A-102, A-110, A-120 and A-123;
- Carry out the duties of the Department's Senior Procurement Executive;
- Implement Executive Order 12352 (Federal Procurement Reforms) which requires the Department to reduce procurement administrative costs and burdens, improve effectiveness of procurement systems, and establish clear lines of contracting authority and accountability;
- Monitor the Department's implementation of Federal Acquisition and Federal Property Management Regulations;
- Update Departmental policy for quarters furnished to employees of bureaus of the Department of the Interior, and oversee the quarters rental surveys as required by OMB policies;
- Coordinate with OMB, GSA and other agencies to ensure compliance with motor vehicle fleet management objectives of the Consolidated Omnibus Budget Reconciliation Act of 1985 (P.L. 99-272);
- Provide management oversight to ensure the Departmentwide procurement and property systems meet user requirements and comply with Departmental policies and Governmentwide system standards;
- Review and evaluate bureau development of automated procurement and property systems to ensure that they meet Department and Governmentwide data requirements, are compatible with Departmentwide procurement and property systems, and are in concert with planned Department and Governmentwide efforts to standardize and integrate administrative systems;
- Identify opportunities for the standardization, sharing and integration of automated systems and support where appropriate for procurement and property management activities Departmentwide; and
- Provide guidance, assistance and oversight Departmentwide to strive to achieve the energy conservation objectives of the Federal Energy Management Improvement Act (P.L. 100-615).

Base Program: The overall base program is described by the major program activities of the Office as follows.

Acquisition and Assistance Division - has both policy making and oversight responsibilities associated with acquisition and Federal assistance programs. The Division coordinates the development of Departmentwide policy, procedural guidance and regulations which either implement or supplement Federal statutes, acquisition and assistance regulations, OMB Circulars, Executive Orders or other policy directives to 1) ensure regulatory compliance and 2) minimize the possibility of waste, fraud or other abuse. Execution of its policy making and oversight functions affects twelve bureau and office procurement systems which collectively process an annual volume of over 500,000 procurement transactions totaling about $1.4 billion and over 4,000 assistance actions within 27 different programs totaling about $900 million.

In FY 1989, the Division was responsible for the following significant accomplishments.

- Coordinated Departmentwide implementation of the provisions of the Procurement Integrity Act (P. L. 100-679), and developed implementing regulations. [In early FY 1990, coordinated suspension of the provisions resulting from enactment of the Ethics Reform Act of 1989 (P.L. 101-194)];
- Implemented interim regulations to address the requirements of the Drug-Free Workplace Act (P.L. 100-690) for contracts and grants;
- Initiated implementation of the Small Business Demonstration Program, enacted by the Business Opportunity Development Reform Act of 1988 (P.L. 100-656, as amended) in concert with the Office of Small and Disadvantaged Business Utilization;
- Strengthened application requirements for contracting officer warrants affecting 2,275 warranted personnel;
- Issued a notice of proposed rulemaking for the "Uniform Administrative Requirements for Grants and Cooperative Agreements";
- Developed interim Departmental policy on the use of bankcards for small purchases of up to $2,000;
- Drafted Department of the Interior Acquisition Regulation (DIAR) coverage to implement the Prompt Payment Act Amendments (P.L. 100-496); and
- Conducted an extensive acquisition management review of the Facilities Management and Construction Center, Albuquerque, New Mexico.

In FY 1990 and 1991, the Division will continue implementation of E.O. 12352 requiring the accomplishment of major procurement reforms throughout the Department in a wide array of areas. In FY 1991, The Division plans to conduct at least two on-site acquisition management reviews to determine the level of field and regional compliance with Departmental regulations and to recommend corrective actions. In addition, as part of its responsibilities under E.O. 12352, the Division will evaluate reviews conducted by the General Accounting Office, the Office of Inspector General, and the bureaus of bureau procurement systems and prepare the Procurement Executive's annual assessment and certification of procurement systems Departmentwide.

The Division will implement new restrictions on lobbying for contracts, grants, cooperative agreements, loans, loan insurance and guarantees as required by Section 319 of the Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 1990 (P.L. 101-121). The implementation will follow guidance issued by OMB.

The Division will also: 1) coordinate implementation of new acquisition and assistance policies, and update the DIAR, as necessary; 2) continue to carry out its responsibilities for Intergovernmental Review of Federal Programs, requiring effective coordination between the Department and State elected officials on decisions involving Federal assistance; 3) develop a Departmental regulation to supplement the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments to ensure the use of uniform policies and procedures throughout the Department; 4) provide oversight and guidance for the Department's competition advocacy program and write the annual report, as mandated by the Procurement Integrity Act (P.L. 100-679); 5) plan and conduct a Departmentwide procurement conference; and 6) continue conducting debarment and suspension proceedings involving any contractors and Federal assistance recipients who have failed to demonstrate a sufficient amount of responsibility to be awarded contracts or assistance.

Property Management Division - is responsible for coordinating the development and implementation of Departmental policies, regulations, and procedures covering real and personal property, motor vehicle fleet management, motorized equipment and energy conservation. The Division coordinates the development of Departmentwide policy, procedural guidance and regulations which either implement or supplement Federal statutes, property management regulations, OMB Circulars, Executive Orders or other policy directives to 1) improve the controls and accountability of personal property including motor vehicles, 2) establish improved physical inventory methods, 3) establish financial liability for personal property, and 4) provide guidance for the Department to meet

National energy conservation objectives. Execution of its policy and oversight functions affects over 900,000 items of personal property Departmentwide valued at over $1.4 billion, buildings valued at $19 billion, a fleet of 26,000 owned and leased motor vehicles and about 19,000 Government quarters (of which 10,645 are administered by the bureaus in the Department). In FY 1989, the Division was responsible for the following significant accomplishments:

- Published revised regulations governing employee financial liability for lost, damaged or destroyed personal property as a result of negligence;

- Conducted a Departmentwide Property Management Conference, attended by 170 bureau property managers, which addressed issues in all areas of property management;

- Provided oversight for regional surveys of Government quarters to establish rental rates and inputs to the OMB-led effort to substantially revise OMB Circular A-45;

- Completed development of the Departmental Fleet Management System (DFMS). DFMS captures vehicle inventory information regarding vehicles owned by all bureaus, and will be used as part of the data necessary to conduct an A-76 type study to determine the most cost-effective method of managing Interior's vehicle fleet as required by Consolidated Omnibus Budget Reconciliation Act of 1985 (P.L. 99-272); and

- Represented the Department on the inter-agency committee responsible for drafting legislation which resulted in the Federal Energy Management Improvement Act of 1988 (P.L. 100-615) that requires a 10 per cent reduction in energy consumption per square foot below FY 1985 levels in Federal buildings by FY 1995.

For FY 1990 and FY 1991, the Division has assigned high priority to oversee the management of personal property Departmentwide by monitoring and reviewing Departmental property management programs to ensure regulatory compliance and minimize the possibility of waste, fraud or other abuse. In the first quarter of FY 1990, the Division conducted an on-site property management review of a U.S. Fish and Wildlife regional office and a refuge reporting to that office. During FY 1991, the Division will monitor bureau corrective actions of program deficiencies identified in OMB Circular A-123 reviews. In FY 1991, the Division plans to conduct at least two on-site property management reviews to determine the level of field and regional compliance with Departmental regulations and to recommend corrective actions.

The Division will also coordinate the study to determine the most cost-effective approach to manage the motor vehicle fleet management program in compliance with fleet management requirements of the Consolidated Omnibus Budget Reconciliation Act of 1985 (P.L. 99-272).

In addition, the Division will: 1) coordinate issuance and implementation of new property policies, and update the Interior Property Management Regulations, as necessary; 2) provide guidance and technical assistance to, and perform oversight of the bureaus' efforts in implementing the Department's Energy Conservation Management Program in order to achieve more efficient energy consumption in buildings as required by the Federal Energy Management Improvement Act (P.L. 100-615); 3) plan for a Departmentwide property management conference; 4) coordinate quarters rental surveys (funded by the bureaus and other Federal agencies providing the quarters), and establish base rental rates for Government quarters furnished for employees of bureaus of the Department of the Interior as well as, the U.S. Forest Service, the Immigration and Naturalization Service, the Indian Health Service, the U.S. Customs Service, the Bureau of Prisons, and other prospective participant bureaus and agencies; 5) continue to provide oversight in the area of uniform relocation assistance regulations which replace existing agency guidelines, and promote program uniformity; and 6) coordinate with GSA and Departmental/bureau law enforcement officials the establishment of uniform standards for acquiring law enforcement vehicles.

Automated Systems Division - is responsible for working together with the bureaus and offices of the Department to conduct planning, development and management of Departmentwide automated acquisition, federal assistance, and property systems with the objectives of 1) improving the responsiveness, effectiveness and efficiency of these automated systems, and 2) providing accurate, complete and timely information for policy making and operational decision-making. Existing systems include the Interior Procurement Data System (IPDS), the Department's subsystem of the Federal Assistance Award Data System (FAADS), and the Departmental Fleet Management System (DFMS). In addition, the Division is leading a Departmentwide effort to standardize duplicative automated procurement and personal property systems operated by the bureaus. The effort is aimed at identifying opportunities for the sharing of data, and the sharing and integration of automated systems and support where appropriate for the procurement and property management activities Departmentwide. Two parallel projects in these areas are currently underway, using life cycle management processes, to determine opportunities for system standardization.

In FY 1989, the Division was responsible for the following significant accomplishments:

- Initiated life cycle management studies of the bureaus' and Office of the Secretary's procurement and personal property programs to identify opportunities for automated systems standardization Departmentwide. These studies will result in recommended approaches leading to more efficient and effective system development and operations, and greater data sharing;

- Completed development and implementation of a substantial number of changes, including quality control edits, to the IPDS and the FAADS. Efforts to enhance the accuracy and completeness of the IPDS database and the timeliness of data submissions included training for more than 100 bureau personnel at headquarters and field locations.

- Represented the Department on an Inter-Agency task group on Government-wide acquisition automation which was chaired by OFPP for the President's Council on Management Improvement.

In FY 1990 and 1991, the Division will continue to lead study teams that include representatives of the bureaus to standardize procurement and personal property management automation across the Department. In FY 1991, working closely with the bureaus, the Division will lead the development and implementation of a standardized personal property acquisition and disposal system and will lead the development of a standardized procurement system. Included in these efforts will be the development of standardized data definitions and interfaces with the Federal Financial System (FFS).

The Division has assigned a high priority in FY 1990 and FY 1991 to continuing the improvement effort for the IPDS and will make this effort a high priority in FY 1991 also. System deficiencies in terms of incomplete and inaccurate data submitted by the Bureaus, have been fully documented by an Office of the Inspector General (OIG) audit report and have been identified as a Departmental material weakness. All corrective actions responding to the recommendations in the OIG report will be fully implemented with systems related training efforts significantly increased and greater management attention directed toward enhanced quality control of the data at all levels. The Division will provide increased levels of training and technical assistance to bureau personnel on the use and support of the IPDS including fulfilling the data requirements of the Small Business Competitiveness Demonstration Program and reporting requirements to the Internal Revenue Service as required by the Tax Reform Act of 1986 (P.L. 99-514). The project to standardize the automation of the Departmentwide acquisition process will contain a major emphasis on improving the completeness, accuracy and timeliness of system-generated data and therefore is integral to fully responding to the recommendations in the OIG audit report.

The Division will continue to oversee the maintenance and operation of DFMS and FAADS; provide management oversight to ensure the Departmentwide procurement and property systems meet user requirements and comply with Departmental policies and Governmentwide system standards. The Division will review and evaluate bureau development of automated procurement and property systems to ensure that they meet Department and Governmentwide requirements. Systems improvements in the area of real property required by Federally-mandated programs monitored by GSA also will be pursued.

The Division will also: 1) prepare a procurement workforce analysis to assist managers in planning and budgeting for training and recruitment; 2) review and verify bureau data to be entered into the Federal Procurement Data System and FAADS; and 3) prepare management reports and analyses of trends on contract and federal assistance obligations Departmentwide.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,346	2,096	750
FTE-T	19	22	3

The proposed increase will provide the resources necessary for the Office to carry out the activities discussed below.

Funds of $200,000 and a core staff of three FTE's are requested for the Acquisition and Property Management Review (AMR and PMR) function within the Office. The Office proposes to hire a procurement analyst and a personal property specialist to organize and conduct the AMRs and the PMRs and a secretary to support this review function. Present staffing levels do not allow the Office to conduct AMRs and PMRs of the bureaus and offices regularly. These reviews are not audits. They are program management reviews conducted by teams of specialists in the areas of acquisition and property management that contribute directly to strengthened management controls in these functional areas. These reviews serve as Alternate Internal Control

Reviews. At a minimum, the Office proposes to review each of these functions at the rate of two bureaus per year so that the full review cycle for the Department would be completed in six years. The scope of these reviews needs to include bureau offices which are organizationally placed below headquarters offices to evaluate the effectiveness of bureau policy and procedural development activities. The reviews would be conducted with the support of personnel from other bureaus detailed to review teams. The funding requested would pay travel and per diem costs for these bureau personnel as well as the costs for printing the reviews.

To make a standardized Departmentwide personal property system operational, $250,000 is requested for FY 1991 to cover Departmentwide project-related costs. Working closely with the bureaus and offices, the Office is leading a Departmentwide effort to standardize duplicative automated personal property systems. Commencing in July 1988, an assessment conducted by a study team made up of representatives from the bureaus determined opportunities for and prepared a proposal to establish system standardization in personal property. The proposed Departmentwide system would make cost-savings and increased professional staff productivity possible through 1) automation of the disposition process, 2) information sharing on available/excess property Departmentwide through electronic data sharing and storage, 3) standardized interfaces with interrelated Departmentwide administrative systems, 4) information sharing on heavy equipment, and 5) integrating of automated systems and support, where appropriate. The Office will lead the study team's efforts to develop and/or acquire and implement this standardized system by the end of FY 1991 with emphasis on making maximum use of existing bureau systems investments. This initiative supports Governmentwide efforts to streamline and improve the effectiveness of administrative systems, and is in concert with the GSA Governmentwide effort to upgrade its automated personal property disposal system.

To analyze detailed requirements and design a standardized Departmentwide procurement system, $300,000 is requested for FY 1991 to cover Departmentwide project-related costs. Working closely with the bureaus and offices, the Office is leading an intra-Departmental study team made up of representatives from the bureaus in determining opportunities for system standardization in the procurement function. This study was initiated in October 1988. The team has developed a proposal to establish automated systems standardization Departmentwide in the areas of requisitioning, small purchasing, solicitation/contract document generation, and Interior Procurement Data System (IPDS) reporting, including reporting on the use of consultant contracts. A Departmentwide system would make cost-savings and increased professional staff productivity possible through 1) automation of the procurement process; 2) standardized interfaces with interrelated Departmentwide administrative systems; and 3) integrating of automated systems and support, where appropriate. The Office will lead the efforts of the team that are estimated to take three or more years to develop and/or acquire and implement this standardized system with emphasis on making maximum use of existing bureau systems investments. This initiative supports Governmentwide efforts to streamline and improve the effectiveness of administrative systems, and is in coordination with and will meet the goals and objectives of the proposed Governmentwide Federal acquisition automation initiative being led by the Office of Federal Procurement Policy.

Distribution of change by object class:

The object class detail for the proposed increase of $750,000 and three workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	3	$185,000
Personnel benefits		25,000
Travel		44,000
Printing		10,000
Other services		465,000
Supplies		15,000
Equipment		6,000
Total	3	$750,000

Justification of Program and Performance

Subactivity: Office of Personnel

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,869	1,843	1,956	1,833	-123
(FTE-T)	31	31	31	29	-2

Objectives: The primary objectives of the Office of Personnel are to plan, develop and implement policies, programs, standards and systems for the effective utilization of human resources to accomplish the overall missions of the Department. Departmental programs are designed to ensure that personnel policies and programs contribute to Secretarial objectives, serve to improve productivity, foster fair and equitable treatment of all employees in the Department, and provide efficient services where centralized Departmental programs are economically advantageous. Additionally, the Office is responsible for the performance of uniquely Departmental management activities such as policy formulation, management of the SES system, national level consultation with labor organizations, interbureau placement activities, evaluation of subordinate level personnel programs, provision of training which is needed across bureau lines, management of the position classification program and analysis of position structures to promote productivity at reduced costs, maintenance of the Departmental Personnel Data Files, and the assumption of policy and oversight roles which have been delegated to the Department by the Office of Personnel Management. These and other subordinate objectives are described under the base program.

Base Program: The major emphasis of the Office of Personnel in 1990 and 1991 will be directed toward the achievement of economies in the delivery of personnel services and greater work force effectiveness and productivity. This will reinforce and extend initiatives to maximize human resources utilization in times of fiscal austerity. Personnel program initiatives to be addressed in 1990 and 1991 are reflected in the following activities.

Position Classification and Management - Those objectives which were the focal point of 1989 and 1990 program initiatives remain ongoing for FY 1991. These include, but are not limited to, emphasis on achievable cost effective improvements in position management and organizational structures, improvement of classification accuracy, review and adjudication of formal classification appeals, prior Departmental classification approval for designated key and Schedule C positions, provision of continuing technical classification assistance to bureaus, and the critique and approval or disapproval of bureau and/or contractor developed classification guides. In addition, FY 1991 will require (1) close monitoring and management of bureau-developed classification standards commensurate with OPM's reactivated involvement in standards development and approval, and (2) participation in Departmentwide A-76 evaluations. Analysis of proposed reorganization initiatives will concentrate on optimum organizational and cost effectiveness.

Senior Executive Service Program Management - Management of the SES system within the Department will continue to emphasize executive performance appraisal, position management, staffing and placement, and executive development to assure the retention and enhancement of an effective executive corps in the Department. Initiatives such as an additional offering of the SES Candidate Development Program, implementing changes to the performance management system dictated by OPM regulation changes, implementing the SES certification program directed in recent pay legislation, and increased case workload brought about by executive mobility will increase the workload of the executive personnel staff. The performance appraisal system will continue to be a major Secretarial initiative dedicated to the objective of improving executive efficiency and organizational effectiveness in response to Departmental program objectives and goals.

Employment and Staffing Programs - Staffing program requirements will continue to focus on hiring under special employment programs, cooperative education programs, improving internal placement and upward mobility program requirements, and emphasizing hiring at the entry level. It is anticipated that the continuing changes in OPM regulations on employment will require close monitoring to assure that employees are not unnecessarily adversely affected, and Personnel Offices are kept well informed.

There will be requirements for increased participation in OPM efforts to make major changes to its directives system, including major changes to the Federal Personnel Manual and the X-118 Qualification Standards. Emphasis will be on providing technical assistance to the Department's personnel community.

Employee Development Programs - The Office will continue to emphasize the training and development of the existing work force as a means to maintain and improve program effectiveness, and seek improved methods of supervisory, career and manager development, identification of training needs, and cost effectiveness of training delivery. More use of cost effective alternatives to classroom training (including computer-assisted instruction) will serve as part of a continuing effort to reduce training costs. Efforts will emphasize consolidated delivery of common training needs through Departmental Learning Centers to reduce expenditures. Special training programs on the Drug Free Workplace and AIDS in the Workplace will be held. A new initiative concerning development and presentation of centralized manager training will be pursued. Efforts will be undertaken to revitalize the existing Upward Mobility Program.

Program Coordination and Evaluation - The Office will continue to direct Departmental personnel management evaluation activities to high priority program areas such as performance management, position classification and internal controls. In addition, the Office will closely monitor legislative and regulatory developments in "early-out" retirement eligibility, alternative compensation systems, and performance management. Information from these several sources will be analyzed to determine the need for revisions in Departmental policy, procedures or issuances. Developments in personnel office automation will be examined and recommendations made on adopting new technology to enhance productivity. Computer programs and procedures will be developed and implemented to support the DOI Drug Testing Program. Management improvement initiatives in the personnel management area will be coordinated and implemented.

Labor Management Relations - Organized union activity continues to increase within the Department. Unions now represent 27,500 of our employees. Increases in pro-union decisions of the Federal Labor Relations Authority and revision of case law precedent by the courts are causing a substantial increase in third-party activities. Emphasis will be placed on upgrading negotiation and representation skills, updating guidance and manuals, and computerizing labor relations cases.

The implementation of employee drug testing will continue to substantially increase negotiations and third-party disputes. Computer assisted case research methods must be continued to allow the Department to continue a uniform and consistent managerial approach to labor relations. Continued emphasis on workshops are essential to keep management current on everchanging issues and directions.

Employee Relations and Compensation - Recently enacted legislation and Administration and Congressional initiatives affecting the drug-free workplace, leave sharing, compensation, personnel security, alternative work schedules, retirement counseling, tax reform and the Social Security System will bear significantly on existing resources. As an example, implementation of a drug free workplace and modifications to the retirement system involving thrift plan elections every six months require extensive employee orientation and continued counseling. Improved control of injury compensation costs will also be sought. Concurrent with these efforts will be technical training for personnel officials, development of departmental policies and procedures, and program review.

A new requirement to administer a Departmental system for determining which law enforcement and firefighting positions are eligible to be covered by early retirement provisions will be a continuing workload.

Proposed systems for employee salary fixing will radically change current compensation methods, including modification of the principles for pay comparability and the setting of augmented salary rates for certain occupations. Agencies will be delegated responsibilities formerly exercised by OPM in pay setting and be asked to conceive customized compensation systems.

Workload Estimate:

Position Classification and Management - Workload for FY 1991 will be in the areas of classification appeals and adjudication, key position review and approvals, classification program and internal control, evaluation, organizational review, analysis and approval of new classification guides and standards, provision of technical and management advisory services, the involvement in a variety of special interest projects and the active oversight and coordinative participation in a DOI bureau experimental personnel management demonstration which is part of the Civil Service Reform Act of 1978. An annual measurable workload of 450-500 individual case actions associated with the identification and maintenance of the Department's key position inventory of approximately 700 positions, supplemented by a rapid increasing number of Departmental classifications appeals, in addition to large numbers of high priority one time assessment or study projects, will continue to dominate resource utilization within this function.

Senior Executive Service Program Management - It is anticipated that there will be a significant increase in executive personnel activity in FY 1991 as the result of normal vacancies, reassignments, and retirements. Workload estimates for 1991 are 510 Executive Resources Board cases; front end, mid-year and final review of 300 (900 total) SES performance appraisal documents; 100 bonus and achievement award recommendations; 20 Presidential Rank recommendations; 60 recommendations for the SES Candidate Development Program (SESCDP); 50 rate increase recommendations and approximately 5,000 telephone and written requests concerning executive policy, operations, training, and job placement opportunities. In addition, the staff will conduct two Personnel Management Evaluations, one SESCDP, three executive training orientations, eight executive training sessions and the review of 350 Individual Development Plans (IDP's). The staff will work cooperatively with four other Federal Departments to conduct 10 SES forums; assist in the conduct of graduation and awards programs for SESCDP graduates and rank recipients; and will plan and assist in the development of performance review boards and prepare letters to bonus and rank award recipients (100 letters).

Employment and Staffing Programs - This Office will continue to review and recommend approval on over 300 key position cases, Schedule C positions, consultants, etc., for the Department and also provide monthly, quarterly and annual reports to Congressional Committees and Federal agencies.

Program Coordination and Evaluation - Emphasis will continue on innovation, efficiency and improved processes in operating personnel offices such as greater use of automation in preparing and tracking personnel actions. Efforts will continue to ensure sharing of accomplishments and problems so other organizations may adopt improvements with a minimum of duplication. Additional studies will seek reduced overhead costs and elimination of organizational redundancy with no adverse impact on essential personnel services. The evaluation of subordinate level personnel programs also will be continued. The Division will play a leadership role in DOI efforts to develop and implement the Department's new Federal Personnel and Payroll System.

Labor Management Relations - Third-party case activity will increase and may require more travel to represent the Department. Drug testing, A-76 and Reform 88 activities will generate increases in the workload. It is estimated that close to 1,000 third-party actions will require direct Departmental involvement at formal stages for FY 1991. Computer-assisted case research methods will be essential for the effective representation of Department cases, and to assist bureaus in what is expected to be a substantial increase in negotiating activities.

Employee Relations and Compensation - Continuing improvements will be achieved in the Departmental performance management system with particular attention to the linkage of the system with personnel actions and with proposed pay fixing innovations. Employee relations, compensation, and incentive awards cases requiring involvement are estimated to number at least 1,500 in FY 1991. In addition, 200 cases requesting Secretarial approval of early retirement eligibility will have to be individually reviewed and recommendations made. Significant staff resources must also be applied to program development activities and updating of obsolete manual provisions.

Additional cases will focus on drug related discipline and appeals, severance pay, discontinued service retirements, unemployment compensation and similar matters. There will be caseload implications arising from new employee relations issues such as leave sharing, parental leave, medicare changes, and AIDS in the workplace. Typical additional workload will consist of retirement counseling, maintenance of retirement records for law enforcement and firefighter employees, and handling grievances resulting from drug testing.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,956	1,833	-123
(FTE-T)	31	29	-2

A net decrease of $123,000 in FY 1991 is requested for the Office of Personnel. This includes an increase of $17,000 to support the Department's Drug-Free Workplace Program, offset by the transfer of $140,000 and two workyears for the safety management function.

Funds of $17,000 are requested for the Office of the Secretary's share of the funding needed to support the increased costs of fostering a drug-free workplace. This program was created to implement Executive Order 12564, Drug-Free Federal Workplace. The funds requested cover a share of the costs of staff training, applicant testing, accident follow-up testing, and necessary support items.

A program decrease in this account of $140,000 and two positions is also requested. This results from the transfer of the safety management function to the Working Capital Fund. This proposed transfer will provide a separate function for the management of all of Interior's policies, programs and regulations related to the safety and occupational health of employees, safety of contractor workforces, and public visitor safety throughout the Department. Providing for this function in the Working Capital Fund will allow for a more effective and coordinated effort in the Department.

Distribution of change by object class:

The object class detail for the proposed decrease of $123,000 and two workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	-2	-$94,000
Personnel benefits		-16,000
Travel		-3,000
Printing		-3,000
Other services		-7,000
Total	-2	-$123,000

Justification of Program and Performance

Subactivity: Administrative Services

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	933	920	974	1,154	180
(FTE-T)	16	16	16	20	4

Objectives: Objectives of the Office of Administrative Services (PMO) for 1990 and 1991 include accomplishment of ongoing responsibilities for maintaining adequate administrative service levels to meet the Department's needs; achievement of greater efficiencies through restructuring or realignment of existing administrative programs and procedures to more closely correspond with geographic and other logistical requirements of the Department; and implementation of policy and procedural modifications resulting from Administration and other management improvement initiatives established outside the Department.

As the Department's principal resource for management of administrative programs and services, PMO is responsible for initiating and developing further program and procedural improvements across organizational lines and within geographic areas as appropriate to minimize resource requirements associated with administrative functions.

Significant benefits accrued to the Department as a result of management improvements such as: (1) delegated authority for operation and maintenance for twenty-three government-owned and leased buildings; (2) successful operation and maintenance of the Main and South Interior buildings; (3) completing and implementing an integrated finance, procurement, and property system within the Office of the Secretary (O/S); (4) providing more technologically advanced printing and reprographic services, electronic publishing, and publications management; (5) programming and implementing the Governmentwide Standard General Ledger for the O/S accounting system, to be shared by two Departmental bureaus; (6) initiating telecommunications activities to prepare for installation of a digital computer switch and to improve data transmission capability in the Interior complex; (7) extending procurement, contracting, property, space, and mail management, contract labor, and other services to bureaus formerly providing such services internally, in conjunction with their relocation of personnel outside the Interior Complex. (Services are now available to all elements of the Department, upon request); (8) extending availability of the O/S fully integrated accounting, procurement, and property management system for use by bureaus; (9) reduction of procurement lead time for supplies and services through expansion of centralized procurement capability via blanket purchase agreements with local vendors; and (10) operation of an office-wide LAN which produces significant productivity improvements through enhanced communications and more efficient document processing in many PMO functions. PMO has initiated and implemented numerous internal management actions during this period to increase efficiency or reduce costs associated with Departmental programs for which it has operational responsibility as well as serving as the lead for implementation of initiatives generated at other levels.

Initiatives under review for possible implementation during 1990 and 1991 include:

1) integration of the automated financial accounting system with other administrative systems (e.g., printing, travel orders, etc.) involving requisition data generated by client offices and acted upon by the servicing administrative office(s);

2) completion of necessary actions for integration of the accounting system with the standard detail system operational on a main frame computer of a host bureau;

3) establishing a Consolidated Administrative Services Unit (CASU) for the Department in the Washington, D.C. metropolitan area to provide Imprest Fund, small purchases services, centralized blanket purchase agreements (e.g., for miscellaneous recurring purchases such as office supplies, carpet purchasing and maintenance, typewriter and personal computer repair, etc.);

4) initiating electronic data interchange with various vendors to reduce manual processes related to purchase orders and invoices;

5) reviewing the feasibility of establishing a nationwide electronic publishing network in the Department;

6) reviewing the feasibility of establishing a CASU to provide all printing and graphics services for the Department in the Washington, D.C. metropolitan area, Alaska, and Denver;

7) increased review and control of space utilization rates within the Department;

8) installation of technologically advanced equipment to provide enhanced printing and reprographic services Departmentwide;

9) improvement of Departmental systems to resolve audits, tracking implementation of actions agreed to by auditors and management, tracking the collection of audit-related debt, and assurance that corrective actions recommended by GAO are actually taken;

10) completion of electronic transport facilities to enhance the GSA Washington Interagency Telecommunications System (WITS) and to improve Departmental ADP/Communications services;

11) extension of procurement, contracting, property, mail management, contract labor, and other services to additional elements of the Department;

12) improvement of processes for in-house issuance of personal property items to bureaus and offices to reduce or eliminate procurement lead time requirements and costs through utilization of excess and rehabilitated property items where possible;

13) refine and implement interpretive design plans for renovation of the Department of the Interior Museum; and

14) continue to achieve enhanced administrative productivity through expansion of the office automation project operational with the PMO LAN.

15) complete rewiring of the Interior Complex for provision of modern telecommunications services;

16) coordinate and oversee restoration of the Main Interior Building in accordance with Historic Preservation guidelines and established practices including the Museum and public display alcoves;

17) review the feasibility of establishing a CASU for all photographic services in the Washington, D.C., metropolitan area;

18) review the feasibility of establishing a Departmentwide printing contract for all Departmental letterhead for cost avoidance;

19) review similar documents printed Departmentwide for multiple award printing contracts for cost avoidance;

20) work with bureaus and offices on establishing 3-year plans on acquiring desk-top publishers, laser printers, and composition equipment for the Joint Committee on Printing; and

21) establish national inventory of all reprographic equipment including copiers.

Oversight of program activities and general guidance in the accomplishment of these activities and all administrative functions are provided by the Office of the Director. These activities include the Departmentwide, Washington, D.C. headquarters, and Office of the Secretary administrative functions described in the "Base Program" section. Additional functions involving direct oversight of Department activities, such as Departmental ethics and audit coordination, establishment and monitoring of human relations programs within the Secretariat, and selected recurring programs of Departmentwide impact funded wholly by the Office of the Secretary appropriation are described below.

Providing oversight, coordination, follow-up, and reporting on internal (e.g., Inspector General) and external (e.g., GAO) audits of Departmental programs and activities, ensuring resolution of all pending items (unresolved audits currently involve over $10 million identified as due the Department);

Providing oversight/tracking, follow-up and reporting on implementation of resolved audits, and maintaining liaison with cognizant bureau management officials and auditors regarding implementation and actions taken;

Ensuring that the Department and its employees are aware of and in compliance with conflict of interest statutes and related Executive Orders and regulatory requirements; and

Promoting equal employment opportunity policies and programs by providing technical assistance and training to supervisors and managers, implementing an aggressive Affirmative Employment Program, improving EEO Counseling services to achieve early resolution of complaints, reducing the number of EEO complaints filed and administering effective special emphasis programs for women and minorities.

Base Program: The Office of Administrative Services will continue to provide essential support services to the Secretariat and other serviced organizations during 1990 and 1991. The role of the Administrative Services Direction is to coordinate and oversee administrative activities throughout the Department as follows: provide primary Departmentwide staff policy for printing and publications, reprographic management, space management, and management of GSA-delegated real property; provide operational responsibility for fiscal services, general office services, procurement, property management, graphics, space, acquisition and utilization, facilities management, and telecommunications for the Office of the Secretary, other Departmental offices, and certain independent agencies and commissions; and provide certain centralized administrative services for bureau headquarters in the Washington, D.C., metropolitan area, including mail services, parking services, Secretarial correspondence files, transportation of household goods, passports and visas, contract travel services, photocopying and various printing functions, facilities management, telecommunications, and employee locator services.

In addition to the Office of the Director, the following activities are funded in this account.

The Special Programs Staff - includes an Equal Employment Opportunity Office that establishes EEO policy for the Office of the Secretary, evaluates and monitors EEO programs, counsels managers and employees on EEO matters, and oversees a network of EEO counselors and coordinators. The EEO Office plans, develops and monitors the implementation of the Affirmative Employment Program Plan and the complaints processing and adjudication activities within the Office of the Secretary and 27 other Departmental Offices. It is also responsible for the development, direction and oversight of Special Emphasis Program activities for women, minorities and handicapped employees and applicants. The Special Programs staff represents the Department on various interagency committees (e.g. Federal Interagency Committee on Education, Economic Adjustment Committee, U.S. Consumer Affairs Council, Federal Interagency Committee on the Homeless, Committee on Volunteerism and the Committee on the Bicentennial of the U.S. Constitution) and coordinates related activities in the Department. It also chairs the U.S. Savings Bond Campaign in the Department and the Partnerships in Education program.

During FY 1989, there were 90 counseling requests of which 71 (79%) were resolved and 19 (21%) were filed formally. Thirty-six formal complaints were processed during the year. It is estimated that during FY 1990, there will be 80 counseling requests of which 75% are expected to be resolved. During FY 1990 and FY 1991 the number of complaints processed will be maintained at the same level as the previous year.

Key objectives for 1990 and 1991 are: to continue delivery of formal training in EEO related topics for managers and supervisors, reduce the number of EEO complaints filed, increase the early resolution of complaints through improved EEO counseling services and involvement of senior management, provide ongoing technical assistance to agency top executives, managers and supervisors in their implementation of the O/S Multi-Year Affirmative Employment Program Plan, assist in the formulation and implementation of recruitment strategies, and conduct the Department's annual U.S. Savings Bond Program.

The Departmental Ethics and Audit Coordination Staff is responsible for implementation of legislation concerning employee ethics and audit followup. The Departmental Ethics staff develops Departmental policy concerning implementation of the Ethics in Government Act of 1978, the Ethics Reform Act of 1989, and other applicable statutes, Executive Orders, and regulations concerning employee ethics, conduct, conflict of interest standards, and related matters. The staff develops and maintains a Departmentwide system and procedures for collection, filing, review, and (when appropriate) public inspection of required financial disclosure reports, and oversees the operation of bureau and office Ethics programs. The staff reviews cases referred by the Office of Inspector General (OIG) of violations or potential violations of conflict of interest requirements. The staff develops, promotes and conducts training sessions concerning ethics and conduct requirements, and reviews financial statements submitted by top level officials of all elements of the Department. The staff ensures that all required financial disclosure reports are collected and prepared, any potential violations are identified and corrections are made, and follows up to verify that all required actions are taken (including divestiture and disqualification). The staff provides liaison with the Department of Justice and the Office of Government Ethics (OGE) and responds to inquiries made by Interior employees, the Congress, special interest organizations, the media and the general public on ethics matters.

Key ethics tasks to be performed in 1990 and 1991 are as follows (figures provided on a per annum basis):

Implement guidance from the OGE or other "Lead" agencies on the interpretation of conflict of interest provisions in Executive Order 12674 of April 1989, the OGE reauthorization Act, the Office of Federal Procurement Policy Act Amendments of 1988, and the Ethics Reform Act of 1989.

Respond to approximately 3,600 referrals or inquiries from managers, ethics counselors and other employees concerning ethics or conduct requirements as they relate to outside work, post employment activities, acceptance of travel expenses, honorariums, etc.; conduct 96-100 ethics training sessions per year for Departmental employees; review Executive Financial Disclosure Reports filed by approximately 400 employees; and monitor the review of Confidential Statements of Employment and Financial Interests filed by approximately 13,000 employees. Conduct mandatory annual ethics training for approximately 70,000 employees via the network of ethics counselors and training personnel. Increase level of funding to comply with OGE guidance to periodically review bureau and office ethics programs. Increase liaison activities with OGE. Revise Department Ethics regulations to incorporate new ethics legislation.

The audit follow-up function is established by OMB Circulars A-50 (Audit Followup) and A-128 (Audits of State and Local Governments). These circulars implement the provisions of the Single Audit Act of 1984 (PL 98-502), the 1988 Amendments to the Inspector General Act of 1978 (PL 100-504), Section 236 of the Legislative Reorganization Act of 1970 and other legislation affecting Department of the Interior programs.

The Audit Coordination Staff is responsible for GAO's conduct of about 60 audits in progress, responding to about 15 draft and final GAO reports within statutory time requirements and tracking an average of 43 new recommendations per year through their completion. Responsibility also extends to tracking implementation actions recommended by approximately 1,500 audit reports issued by the OIG, other Federal agencies and non-Federal agencies.

The 1988 Amendments to the Inspector General Act of 1978 were signed into law in October 1988 and established new audit reporting requirements for management officials. The law expressly required that statistics be kept and reported to the Congress in a two-part report on final actions taken by management in response to approximately $20 million in questioned costs identified by audit and over $1 billion in recommendations that funds be put to better use.

The legislation requires that statistical tables be provided showing the number and value of audits for which no final action has been taken by the end of the reporting period. As of September 30, 1989, there were 104 audits containing disallowed costs of $6.3 million which were outstanding after one year. Nine contractor claim audits, containing disallowed costs of $10 million were on appeal and one royalty management audit, valued at $4.6 million was incomplete. Forty-six audits containing $276.7 million in recommendations that funds be put to better use and agreed to by management were implemented.

Estimates of annual audit activity indicate that audit followup tasks to be performed in 1990 and 1991 will involve a higher level of activity than in 1989. GAO is expected to initiate about 15 new reviews while closing about 15, thereby maintaining an annual workload of about 60 reviews in progress. This will generate requirements for responding to these 15 reports with official Departmental comments and tracking about 30 new implementation actions through completion.

The number and value of audits and implementation actions resulting from audits are expected to increase. The 1988 amendments not only impose new reporting requirements to the Congress, but also create a need to complete written implementing procedures within the Department.

Increase from 1991 Base

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	974	1,154	180
FTE-T	16	20	4

The proposed increase will provide for two additional workyears for the ethics function and two additional workyears for the audit function.

The recent passage of four new pieces of ethics legislation have significantly increased the workload and responsibilities of all Executive agencies including Interior. The major new requirements imposed by each law are: (1) Executive Order 12674 - requires the Department to conduct mandatory annual ethics training to most of its employees; and results in the need to revise and republish 70 pages of Department regulations on Employee Responsibilities and Conduct; (2) Office of Government Ethics (OGE) Reauthorization Act of 1988 - requires the Secretary to submit a comprehensive annual report on the state of Interior's ethics program to the Director, OGE; increased enforcement authority of OGE will require Interior to increase its liaison and reporting activities with OGE; this legislation also requires more extensive review and monitoring of the effectiveness of bureau and office ethics programs; (3) Office of Federal Procurement Policy Act Amendments of 1988 (OFPPA) - It is estimated that this law applies to approximately 70% (51,000) of Interior employees. As a result, this legislation in conjunction with E.O. 12674 requires Interior to conduct annual mandatory formal training on ethics to these employees. The implementation of the OFPPA has been suspended until November 30, 1990; and

(4) Ethics Reform Act of 1989 - Based on the recommendations of President Bush and his Ethics Commission, this law overhauls or refines most of the existing ethics laws. The Ethics staff will need to take the time and the necessary training sessions to learn or re-learn the interpretation and implementation of many of these laws.

To satisfy these new legislative requirements, additional funds are needed for two new positions. The positions requested include a training officer and a program specialist. Funds for computer equipment, supplies and services will also be essential to meet these new legislative requirements.

Legislative requirements to provide annual mandatory ethics training to employees will be accomplished by the training officer through formal training sessions, and the use of video presentations, bulletins, pamphlets and other learning tools. The program specialist will be responsible for satisfying the new OGE reporting requirements; performing liaison activities with the OGE; monitoring and reviewing bureau and office ethics programs; and performing other legislative obligations as assigned.

The 1988 Amendments to the Inspector General Act of 1978 established new audit reporting requirements on management officials. The law expressly requires that statistics be kept and reported to the Congress in a two-part report on final actions taken by management in response to questioned costs identified by audit and recommendations that funds be put to better use.

To accomplish this new reporting requirement and accomplish those additional responsibilities associated with the requirement, additional resources are needed.

These two positions will work with officials of the ten bureaus of the Department to resolve Inspector General audits, negotiate agreement between auditors and managers, track the implementation of audit recommendations and collection of audit-related debt, follow up to assure that actions agreed to are actually taken, and complete statutory reporting requirements to Congress. Should this additional funding not be provided, significant weaknesses in implementing audit recommendations within Departmental programs will continue. Also, accurate and complete reporting under the 1988 Amendments will be a significant weakness.

Computer equipment for each new position is essential since all ethics and audit information databases are maintained, shared and retrieved on an existing computer network system.

Distribution of change by object class:

The object class detail for the proposed increase of $180,000 and four workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	4	$132,000
Personnel benefits		20,000
Travel		1,000
Printing and reproduction		19,000
Equipment		8,000
Total	4	$180,000

Justification of Program and Performance

Subactivity: Library Services

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,405	1,385	1,441	1,441	0
(FTE-T)	28	28	28	28	0

Objectives: The objectives of the Departmental Library are to: provide necessary library and information services to employees in support of Departmental programs; collect the publications of the Department, catalog them, and make them available; support and provide backup to other Departmental libraries around the country; and promote increased sharing of common services and resources.

Library and information services are basic to any serious research effort and no less so to the study of the proper use of the natural resources of the country. The Department is a major publisher with 8,000-10,000 different documents, research reports, etc., published and distributed each year. These publications constitute a report to the Congress and to the taxpayer of the work done by the Department. The Departmental Library is charged with the responsibility to collect the publications of the Department, to catalog them, and to enter the bibliographic records of the publications into the national data base so that they will be available to all who might need the information. This activity will ensure appropriate dissemination of the work of the Department.

Base Program: The Library provides library and information services directly and indirectly (through the field libraries) to all employees of the Department.

During 1989, the two libraries (the Natural Resources Library and the Law Library) currently operated by this office provided information services to over 1,500 persons each week, or 80,000 persons during the year. In several areas related to the natural resources of the United States, the two Departmental libraries are the best sources of information available, serving, in addition to Department of the Interior employees, other libraries (while taking advantage of reciprocal services), Members of Congress and their staffs, contractors, consultants, and the public in general. Information services range from on-site use of books and journals to major research efforts resulting in summary reports or the development of on-line data bases. The Library orders books and subscriptions for the Departmental libraries, for the Office of the Solicitor, and for the offices of the Office of the Secretary. Over 3,000 procurements were made in 1989, more than 1,400 of which were for offices other than the Library. The Library cataloged and added to the collection approximately 4,500 new titles, of which some 2,000 were Departmental publications.

To ensure that information services available to Departmental users are delivered in the most timely fashion, the Library continues to move forward on implementing an integrated, automated library system. The past fifteen years of library catalog records are currently accessible through a computerized CD-ROM catalog. Although this is one step in developing a totally integrated Departmental Library system, on-going phased systems development is essential to increase the overall accessibility to users and provide management with needed statistics.

No increase in funds is requested for FY 1991.

Justification of Program and Performances

Subactivity: Information Resources Management

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	2,262	2,230	2,352	2,352	0
(FTE-T)	42	42	42	42	0

Objectives: This Office has responsibility for Departmentwide oversight and guidance on the development, management, and use of information resources and information technologies. The responsibility encompasses automated data processing management, office automation, data administration, and telecommunications management of voice, data, and radio communication systems and services. The Office strives to improve the quality, timeliness, and availability of information used within the Department at the least possible cost, and to meet the Department's responsibilities under a number of Federal statutes including the Communications Act of 1934 (P.L. 73-416) as amended, the Automatic Data Processing Equipment (Brooks) Act of 1965 (P.L. 89-306) as amended, the Paperwork Reduction Act of 1980 (P.L. 96-511) as amended, and the Computer Security Act of 1987 (P.L. 100-235).

The Office is the Department's focal point for information resources management (IRM) planning, policy development, program coordination and direction, and technical assistance and review in support of the many and varied mission and administrative requirements of Interior bureaus and Departmental offices. The Office serves as the point of contact on related interagency and intergovernmental matters with the Office of Management and Budget (OMB), the General Services Administration (GSA), the General Accounting Office, the National Telecommunications and Information Agency, the National Communications System (NCS), and the National Institute of Standards and Technology.

In 1989, the Department continued to increase its involvement in developing IRM policies and overseeing the implementation of technologies for managing information resources. Policy guidance on life cycle management and accountability for information systems was developed. The Information Resources Management Review Council (IRMRC) continued as an important mechanism for establishing IRM goals and providing executive direction. The

IRMRC includes as members the Under Secretary, Assistant Secretaries, the Solicitor, and the Director of Budget. The IRMRC is very active in identifying the need for IRM policy and guidance; reviewing major system developments and acquisitions; and tracking progress on critical systems.

In addition to responding to managerial direction and policy needs governing the development, maintenance, and operation of common systems and information resources-related services, the Office has developed a stronger IRM resources sharing and technical assistance program. Forums for bureau IRM managers continue to keep officials informed on up-to-date technology and on current IRM-related activities, legislation and other mandates. Efforts are being made to ensure that mandatory FTS 2000 telecommunications services are being expeditiously implemented throughout the department.

The Office is improving information systems and services by emphasizing Departmentwide development and use of common IRM services and technologies to realize efficiencies and economies. Departmentwide systems are being reviewed to determine the most cost-effective approach to sharing resources.

The Office is providing technical assistance in support of the Department's standard accounting system, commonly referred to as FFS (Federal Financial System), and the new Departmentwide payroll/personnel system. The Office is working closely with the bureaus and providing technical assistance on major system developments such as BLM's Automated Land and Mineral Record System (ALMRS) and OSM's Coal Data Management Information System (CDMIS).

Base Program: In 1991, the Office will continue to ensure that the Department's information resources management responsibilities are performed in the most efficient way to maximize cost savings and support the Assistant Secretary - Policy, Budget and Administration in carrying out specific duties relating to the Senior Agency Official designation (P.L. 96-511). The overall base program is described by the major program activities of the Office as follows:

The IRM Program Planning, Review, and Standards Division - is responsible for developing overall IRM long-range plans; providing staff support to the IRMRC; managing the Department's computer security, data administration, IRM internal controls, and IRM review program; coordinating and developing Departmentwide information processing standards; coordinating adoption of Federal Information Processing Standards related to information management and technology and developing the Department's Information Technology Budget. In 1989, the Division provided support to bureaus in implementing provisions of the Computer Security Act of 1987, strengthening IRM internal controls, and conducting IRM program reviews. The Division developed comprehensive life cycle management guidance to help bureaus implement office automation systems and a benefit/cost analysis guide to assist in determining economic implications for IRM proposals. The Division also completed a review and analysis of IRM proposals in the FY 1991 bureau budget requests.

The Division produced the Department's Five-Year ADP and Telecommunications Acquisition Plan; prepared an IRM Strategic Overview in response to OMB's annual IRM planning bulletin; helped bureaus develop strategic IRM plans; and chaired the Administrative Service Center Compatibility Work Group to ensure compatibility between the Denver, Colorado, and Washington, D.C. Administrative Service Centers to guarantee continuity of operations for critical administrative systems.

In 1990, the Division plans to: develop and publish the Department's Strategic IRM plan for fiscal years 1990-1994; establish a framework for managing IRM through the revision of Departmental Manual Chapter 375 DM 1, IRM Program Definition, Goals, Responsibilities; strengthen IRM management by integrating the IRM review process with the IRM planning and budgeting processes; develop Departmental implementation strategies for mandatory IRM standards (GOSIP, POSIX, etc.); strengthen computer security and IRM internal controls through the revision of 375 DM 19, Information Resources Security Program, and the development of handbooks/guidelines for risk assessment, security reviews, and certification and accreditation of automated information systems; and formally establish the Department's data administration program through the publication of 378 DM 1, Data Administration.

The Division will continue to develop Departmental IRM policies, standards, strategies, and objectives; continue to support the IRMRC; strengthen life cycle management of automated information systems; continue to provide technical support to the PAY/PERS system; provide support to the Office of Acquisition and Property Management in the development of a common automated personal property system and a common automated procurement system; and provide support to the Office of Management Services in the development of a Uniform Crime Reporting System and the replacement of the Safety Management Information System.

In 1991, the Division will continue to provide leadership in implementing the actions identified in the Strategic IRM Plan. The Division will also develop software engineering policies and guidelines to assist bureaus and offices in developing critical automated mission support systems.

The ADP Acquisition and Technical Assistance Division - is responsible for reviewing, monitoring, and approving the application of ADP technologies within the Department in accordance with applicable laws, and with regulations and guidance issued by OMB, GSA, and other oversight agencies. The Division evaluates bureau compliance with policy and procedural guidance. The Division will do an on-site review of the ADP acquisitions of a major bureau during FY 1990. The Division will also evaluate alternative methods of performing reviews for the future.

This includes adherence to life cycle management principles for the acquisition or development of automated systems to improve utilization of resources and information resources acquisition policies to promote cost-effective and justified procurements.

During 1989, the Division required defendable documentation for acquiring ADP hardware, software, and services which resulted in receiving $244 million in clearances from GSA, and enabled the bureaus to avoid $7.1 million in annual expenditures through competitive discounts and other management measures. The Division prepared improved procedures for reviewing and approving bureaus' acquisitions and increased bureaus' ADP procurement thresholds.

In 1989, the Division issued revised policies on the use of life cycle management procedures, reutilization of ADPE, and accountability for major information systems. The Division will continue to use the Five-Year ADP and Telecommunications Acquisition Plans to encourage bureaus to strengthen IRM acquisition management control and planning, so that additional authorities may be delegated to the bureaus when warranted. These plans will also be used to identify potential consolidated procurements of similar technologies among the bureaus.

In FY 1990 and FY 1991 the division will increase its emphasis on providing technical assistance and oversight to the very large systems development projects and ADP acquisitions. Examples include BLM's Modernization Project, the USGS' Advanced Cartographic System and OSMRE's Coal Data Management Information System. This will also include working with GSA on identifying potential future candidates for the "Trail Boss" program.

The Telecommunications Systems Division - provides direction, guidance and technical support for satisfying the Department's telecommunications requirements. This includes the management of radio, data, and telephone communication systems and services. Acquisition and implementation approvals are provided in conjunction with GSA, OMB, and the National Telecommunications and Information Administration, and coordinated with the National Communications System (NCS) and other appropriate Federal, State, and international authorities.

In FY 1989, the Division provided technical and procurement assistance and guidance to bureaus for the replacement and upgrading of telephone systems; maintained records for 19,781 assigned radio frequencies and processed 6,160 radio frequency actions; provided technical assistance to bureau personnel in the management, design, and operation of their radio communications systems; reviewed and authorized telephone system and data system replacements; provided assistance with multiple Local Area Network (LAN) implementations; resolved GSA telephone service problems; provided technical assistance to bureaus in the acquisition of LANs and telephone systems; and issued advisory memorandums to provide information about industry and regulatory changes. Replacement of older, leased telephone systems resulted in annual operating cost reductions of $753,454. Radio frequency coordination was provided for Interior's drug rehabilitation program and the Vice-President's drug enforcement program. Support was provided in developing the NCS Shared Resources High Frequency Network program, and Very Small Aperture Terminal (VSAT) satellite technology was investigated. VSAT services were implemented at the Boise Interagency Fire Center, and GSA approval was revalidated for a VSAT network supporting the U.S. National Seismic Network.

FTS costs were analyzed quarterly and future costs estimated for budgetary planning. FTS telephone numbers were validated nationwide and an inventory of telephone systems was developed in anticipation of the pending implementation of FTS2000 services. Planning for the Department's transition to FTS2000 was initiated and Departmental requirements were coordinated with GSA. A Privacy Act notice was published on the use of long distance telephone records and a pilot program developed for the distribution of GSA sampled long distance call records. A call verification program to reduce personal abuse of long distance telephone services will be instituted when call records are routinely available from FTS2000. Coordination with GSA in planning for the implementation of the Washington Interagency Telecommunications System resulted in both the Main and South Interior Buildings being on the same exchange.

Interagency support was provided through the Division's participation on interagency telecommunications and NCS committees. Division personnel resolved radio interference problems between Interior bureaus, other Federal agencies, and commercial radio operations. Guidance was developed on spectrum management issues in the former Trust Territories of the Pacific Islands and new radio call signals were assigned to the Republic of the Marshall Islands (RMI) and the Federated States of Micronesia (FSM). Representation was provided at RMI and FSM Joint Telecommunications Board meetings to resolve international frequency management and regulatory issues.

Activities in 1990 and 1991 will concentrate on improving telecommunications management capabilities to better respond to the changing technological and regulatory environment. Specific policy and guidance will be developed on the use of telephone call detail records to curb personal abuse of long distance telephone services. In support of the Department's Telecommunications Strategic Plan, bureau communications management actions will emphasize telecommunications management improvement, improved telephone system inventory and billing accountability, and transition to the FTS2000 network.

Regularly scheduled bureau/office telecommunications manager meetings will continue so all personnel are kept apprised of current operational, regulatory and technology developments. Additional efforts will be made to improve the sharing of telecommunications resources and widen the use of FTS2000 data communications services. Telephone and Radio Systems Handbooks will be updated, and a Data Communications Handbook will be issued. New telecommunications management policy and guidance will be published in the Departmental Manual.

The Automated Systems Division - is the focal point for information resources management within the Office of the Secretary (O/S). It provides technical assistance in planning, acquisition, and implementation of automated information and office systems in support of O/S functions. 1989 accomplishments included: implementation of the Interior Procurement Data System in support of the Federal Procurement Data System operated by GSA and the Legislative Tracking System for tracking Interior related legislation; software modifications to the Department's Radio Frequency Application/Assignment System to add an expanded inquiry capability and modifications to the O/S Payroll-Personnel System to provide consistency with the Departmental PAY/PERS System; the installation of new hardware and software to accommodate additional applications and users of automated management information on minicomputers; systems analysis in support of the Departmental Law Enforcement and Safety Management programs; establishing the ADP Security function within the O/S in accordance with the Computer Security Act of 1987; implementation of a series of IRM technical bulletins to disseminate information throughout the O/S; implementation of a local area network within OIRM for electronic communications and sharing of information; and development of O/S IRM Strategy for 1990. Additionally, the Division provided direct technical support to the transition of administrations by assuming the operational, training, and troubleshooting responsibilities for the Secretary's office automation facility.

Other priorities include: upgrading the computer capability servicing the Executive Secretariat and Office of Congressional and Legislative affairs, co-locating the O/S administrative computer facility with the Secretary's office automation computer facility for more efficient operations, and supporting Departmental initiatives in the areas of data administration, ADP security, and IRM reviews.

No increase in funds is requested for FY 1991.

Justification of Program and Performance

Subactivity: Management Improvement

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,191	1,174	1,247	2,167	920
(FTE-T)	19	19	19	19	0

Objectives: The Office of Management Improvement is responsible for organization management, and management, quality, and productivity improvement throughout the Department. The Office provides overall direction to bureaus and offices in implementing the President's Management Improvement Program including Governmentwide policies articulated in Executive Order 12637, the President's Quality and Productivity Improvement Program, and Executive Order 12615, Performance of Commercial Activities.

The Office also provides Departmentwide guidance on, and oversees bureau and office efforts in carrying out responsibilities under the Federal Records Act of 1950 and the Paperwork Reduction Act of 1980 (P.L. 96-511), the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act of 1974.

Base Program: The Office completed its first full year in FY 1989 of operating under a reorganized structure. During this time, the Office added monitoring of two contracts for major Departmentwide studies to its broad range of responsibilities and functions. In FY 1990, the Office will assume responsibility for developing and monitoring a third contract to provide Total Quality Management (TQM) training and consulting services to Policy, Budget and Administration (PBA) offices. In 1990 and 1991, the Office will continue to improve its support of the Assistant Secretary-PBA through this contract as well as through direct provision of services. Continued assistance and guidance to the other Assistant Secretaries and bureaus, usually at their request, will be emphasized in 1991. This will be especially important in a number of emerging areas, i.e. TQM, focused improvements on responsible management, and more focused tracking of regulations. Principal activities of the Office's major program areas are described next.

Division of Organization and Operations Analysis:

This Division is responsible for planning, organizing, developing and coordinating the Department's TQM effort, Productivity Improvement Program, Productivity Enhancement Funding Program, and implementation of OMB Circular A-76 and various privatization efforts. The Division is responsible for preparing the Department's annual Quality and Productivity Improvement Plan required by OMB Circular A-11; for overseeing, tracking and providing technical guidance and assistance on Departmentwide, intra- and inter-bureau initiatives aimed at improving administrative management and increasing productivity in program functions; and for reporting the progress and results of these efforts to top-level Departmental officials, OMB and the President's Council on Management Improvement (PCMI).

The Division serves as the Department's point of contact with OMB on Bureau quality and productivity improvement plans, and responds to requests for information on management, quality, and productivity improvement efforts, privatization initiatives, and A-76 related matters from OMB, the PCMI, Congress and other interested groups. The Division also represents the Department on interagency taskforces and committees, such as the Productivity Officers' Working Group and the Interagency Management and Organization Group, which are aimed at improving management processes and structures and increasing efficiency in common government and agency functions. In 1989, the office actively supported OMB and the PCMI in producing the Second Annual Conference on Quality and Productivity Improvement.

This Division serves a vital role in ensuring implementation of the President's Quality and Productivity Improvement Program by developing Departmentwide policy and guidance, promoting a common understanding of program requirements among the bureaus, advocating program goals and objectives to top Departmental and bureau officials and program and administrative managers and employees, assisting the bureaus in developing meaningful measurement systems and baseline data, and ensuring full and active program participation by the bureaus and offices. This Division also monitors bureau progress in carrying out productivity, quality, and management improvement initiatives, privatization projects and A-76 studies, and reports results to OMB and Congress. Departmental leadership and involvement are critical to creating a quality-minded environment throughout the organization and to successfully meeting the President's goal of a 3% annual increase in productivity in appropriate program functions. Departmental oversight and advocacy stimulates active bureau participation in these programs and ensures they are implemented evenly among the bureaus and in a manner compatible with both mission objectives and program requirements.

The Division also provides analytical support and technical assistance to the Office of the Secretary and bureaus and offices of the Department through management reviews, systems studies and special projects. This Division frequently leads studies and surveys concerned with mission, functions, organization, administrative policies and procedures, work methods and flow, systems management, productivity, and related activities throughout the Department. These efforts include planning, developing or adapting systems to improve management decisionmaking, and are aimed at resolving management-identified problems. In addition, this Division responds to requests for information in its areas of responsibility from Congress, GAO, OMB, GSA, interagency committees and independent commissions.

The Division reviews proposed major organizational changes affecting the bureaus and offices, recommending approval, disapproval or modification. This includes coordinating joint review by other offices in the Secretariat and mediating between the proposing office and reviewers to resolve concerns with proposed organizational changes.

In 1989, the Division coordinated development of the Department's FY 1991 Quality and Productivity Improvement Plan. Bureau-proposed plans to improve the productivity and service quality of discrete program functions are a major part of the Department's plan. Seven bureau plans were prepared for FY 1991, increasing the number of Interior bureau plans under the Governmentwide Productivity Improvement Program from 32 to 39. Besides assisting bureaus and offices in identifying and developing quality and productivity plans, the Division has continuing responsibility for tracking the status of the Department's 39 bureau plans in the Governmentwide Program. The Office's workload in productivity improvement will continue to grow each fiscal year through FY 1992 as the remaining program functions develop and implement quality and productivity plans. Corresponding workload increases will occur in tracking and monitoring approved plans as all functions are brought into the program.

Started in 1987 to finance low-cost, high-payback quality and productivity improvement ideas of employees, the Productivity Enhancement Funding (PEF) Program has generated over 430 money-saving ideas to date with 50 approved for funding. In 1989, this Division issued a second call for project proposals under the PEF Program. Eighteen projects, mostly proposed by field level employees, were funded by the bureaus in FY 1989. A recently completed third call for PEF projects resulted in 13 more projects being approved for inclusion. This Division also tracks PEF project progress, and collects data on project savings. A number of the earlier projects, initiated in 1988, are now showing good return on investment: from seven-to-one up to eleven-to-one. The PEF

Program also includes an awards competition for employees who implement the most successful PEF projects each year. In 1989, three employees won the first annual Secretarial PEF Awards for introducing and implementing innovative projects which will save over $600,000 over the next three years.

The Division also led or participated in a number of organizational and systems studies and special projects in FY 1989. These included providing substantial support to the development of transition material for the new administration; providing professional and staff assistance in support of a TQM presentation for the Secretary and top staff; developing an agency-wide contract for bureaus to use in performing studies of commercial activities; conducting a Congressionally mandated study on which components to move into the Department's facility in Avondale, Maryland; analyzing and developing recommendations for an emergency preparedness system; assisting in a study of DOI's fleet management operations; and reviewing and analyzing organizational/staffing issues for a number of Assistant Secretaries.

In 1990 and 1991, this Division will significantly increase its focus on implementing the TQM concept in the Department. This will involve actively espousing TQM and assisting management in creating a receptive climate for its implementation. Appropriately, this effort will continue to focus on bringing top management into the process first. The Division will organize a second weekend TQM "retreat" for the Secretary and top staff with presentations by private and government TQM experts and advocates. The Division will also develop and administer a contract to provide TQM training and consultation services to PBA offices.

Providing additional consultation to bureaus and offices for the purpose of identifying and developing quality and productivity initiatives and PEF projects will also be emphasized. Although quality and productivity improvement plans covering 77 percent of the Department's program functions have been developed or are currently under development, some complex, intractable and sensitive program functions remain to be done. Consequently, it is expected that indepth technical assistance to, and intensive coordination with the bureaus will be required during the development of the FY 1992 Quality and Productivity Improvement Plan.

Likewise, PEF projects continue to increase in number as the PEF Program matures. In FY 1990, 13 PEF projects are expected to be funded. Besides assisting bureaus in developing associated project proposals, the Division will coordinate and oversee the Departmental review and approval process for PEF projects, manage the process of providing bureaus with matching funds if appropriations are secured for this purpose, track the status of approved PEF projects, encourage the broader use of successful innovations, coordinate a counterpart awards program to recognize organizations which successfully implement PEF projects and evaluate overall program effectiveness.

Under Executive Order 12615 each agency is required to develop an inventory of its commercial activities as one step in privatizing appropriate functions currently performed by the Federal government. In 1989, this Division successfully developed a competitive task order-type contract that will be used to assist bureaus in conducting A-76 studies, where they deem appropriate. This contract is also being used to prepare the Department's inventory, with contract monitoring and assessment of contractor performance being provided by this Division. Once the Department's inventory is complete, (spring of 1990) a schedule of studies will be developed. This Division will then monitor the progress of these studies and report quarterly to OMB. In FY 1990 and succeeding fiscal years, the Division will devote half of a workyear to ensuring that the study goals of the Executive Order are met. In addition to the privatization studies being tracked and reported in association with OMB Circular A-76, this Division also oversees other privatization initiatives such as proposals to sell certain assets to the private sector or to transfer operation and maintenance of facilities to user groups.

The Division will participate in an interagency PCMI study of OMB Circular A-76 in FY 1990. Internally, studies and special projects comparable to those performed in FY 1989 are expected to require the Division's leadership or participation in FY 1990 and FY 1991.

Division of Directives and Regulatory Management:

This Division is responsible for the Secretarial Directives System, the public information collection program, implementation of the Privacy Act, the Freedom of Information Act (FOIA) Program, including FOIA appeals, and the Departmental regulatory and records management programs.

In FY 1989 this Division was assigned Departmentwide responsibility for the Cooperative Administrative Support Unit Program (CASU). The CASU program is an initiative of the PCMI and is an alternative method of providing administrative services to federal agencies at a reduced cost and improved level of service delivery. The Department has been very involved in this program since its inception in 1985, serving in leadership roles at a number of CASU sites around the country. The Assistant Secretary-PBA currently serves as a member of the CASU National Board of Directors and in the past, this Division has provided staff support to the PCMI Interagency staff on numerous occasions. In 1989 this Division represented the Department at CASU meetings, served as liaison between the PCMI staff and the Department, acted as point of contact for field offices participating in CASU projects, and developed an in-depth briefing on the CASU program. During 1990 the Division will be conducting an assessment of the Department's participation in CASU projects, focusing on actual cost savings and management improvements realized.

The Division is responsible for providing policy guidance on mail management within the Department. During 1989, a preliminary assessment was conducted of the Department's use of express mail services versus other more cost efficient methods of mail service. Specifically, this assessment focused on the potential cost savings involved in using facsimile equipment for small mailings as opposed to relying on express mail services where an expedited mailing is required. Initial findings indicated a potential for appreciable savings if the Department were to reduce its use of express mail to 50% of the current governmentwide usage. In 1990, this Division will follow-up with a more detailed analysis, and if the findings warrant, will be issuing policy guidance to regulate the use of express mail service and encourage the substitution of more cost efficient methods of mail service.

The Division's management of the Department's information collection program in FY 1989 included review of 52 individual information collections for adherence to the requirements of the Paperwork Reduction Act. Several reductions were identified in the course of these reviews, resulting in savings of time and money to the public, as well as a corresponding decrease in expenditures by the Department to process collected information.

The Division played a key role in the development of new information collection budget procedures which OMB implemented in FY 1989. These procedures increase the utility of the information collection budget by emphasizing its use as a management tool for cutting costs and using information resources more effectively. They have also significantly reduced the reporting burden on Federal agencies.

During FY 1989, this Division conducted a management review of the Equal Employment Opportunity office within the Office of the Secretary. This review focused on all phases of the EEO program and on the organizational and functional alignment between this office and the Departmental Office for Equal Opportunity. The review included a series of findings and recommendations for consideration by the Assistant Secretary-PBA.

During FY 1989, a member of this Division served as an EEO Counselor for both individual and class action complaints filed within the Department and successfully resolved four complaints (one of which was a class action) while still in the informal stage. It is estimated that the successful resolution of these complaints saved the Department between $300,000 to $500,000.

During FY 1989, this Division provided records management technical assistance to the U. S. Holocaust Memorial Museum.

In FY 1989 the Division conducted a comprehensive study of a major information collection within the Fish and Wildlife Service (FWS). The information collection is a national survey of hunting and fishing wildlife related activities and is conducted every five years. In 1985 the cost of conducting the survey exceeded $9 million due in part to the size of the survey and the methodology employed. The study methodology included review of all statutory authorities for conducting the survey, interviews with national organizations who consult with FWS on survey content, interviews with Census Bureau officials involved in the survey design and methodology, and ongoing consultation with FWS program officials and state wildlife resource offices. The preliminary findings and recommendations indicate that through a reduction in survey content and change in methodology from one on one interviews to telephone interviews, the survey cost could be reduced by almost $5 million. Decisions on recommendations will be forthcoming in 1990.

In 1989, the Division also worked with the Office of Surface Mining and Reclamation Enforcement to identify burden reductions and has expanded the study in an attempt to look at possible duplication of information between the States and the Federal government. Coordination of an interagency effort between the Department (FWS) and the U. S. Customs Service plus other agencies, dealing with the import of merchandise or commodity information, is under the purview of this Division. Five collections from FWS have been identified as ready for early incorporation into a paperless system.

During FY 1989, this Division prepared 72 final decisions on FOIA appeals and documentation to publish six new and revised Privacy Act systems of records notices in the Federal Register, reviewed and processed 133 proposed and final rulemaking documents for OMB approval and publication in the Federal Register, processed 68 directives for publication in the Departmental Manual and reviewed 52 information collection clearance requests for submission to OMB for approval pursuant to the requirements of P.L. 96-511.

In 1989, after reviewing bureau and office FOIA programs to assess policies and procedures and identify deficiencies, the Division developed a comprehensive manual providing uniform policy and in-depth guidance and procedures for administering the FOIA in the Department. This is the first Departmentwide handbook ever provided and is designed to ensure consistent implementation of the program throughout the Department. The new handbook contains detailed guidance on processing FOIA requests, including when and how to apply the nine exemptions and examples of the types of information that may be withheld under each, procedures for assessing and collecting fees and criteria for determining fee waiver, and 21 sample letters to assist employees in responding to requests. It also requires bureaus and offices to establish control systems for tracking and monitoring FOIA requests. The draft handbook has been reviewed by the bureaus and offices and will be issued early in 1990 pending completion of the Office of the Solicitor's review. The Division also coordinated and/or responded to 73 initial FOIA requests, two of which are ongoing and involve fees of over $200,000. In 1990 and 1991 training will be developed and conducted for bureau managers and employees involved in responding to FOIA requests.

In 1989, the Division developed procedures designed to increase Secretarial oversight of the rulemaking process, which will ensure internal consistency and compliance with policy guidance provided by the Administration and the Secretary. In conjunction with this effort the Division has designed and is implementing a Secretarial Regulations System to provide more focused tracking of regulations within the Department.

With respect to its other functions, for FY 1990 and 1991, this Division will concentrate on maintaining the same level of services and technical assistance, guidance and advice to the bureaus in managing and enhancing their records, regulations, information collection and Privacy Act programs.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,247	2,167	920
(FTE-T)	19	19	0

An increase of $520,000 is requested for FY 1991 to establish a Departmental fund under the Productivity Enhancement Funding (PEF) Program to underwrite bureau PEF projects on a matching basis up to dollar-for-dollar. Projects eligible for funding under the PEF Program are low-cost, high-payback productivity and quality-boosting ideas, suggested by employees, that would otherwise not be funded because of competing budget priorities. By funding up to half the start-up costs of qualified employee-generated ideas through a Departmental PEF Fund, the Department will provide bureaus with an incentive to support small, innovative improvements at the field level. The return on investment for such projects can be very powerful. Some PEF projects which began in 1988 under the Department's Program and were fully funded by the bureaus are beginning to return seven to eleven times the original investment. For FY 1991, start-up costs for 20 projects, or approximately two per bureau, will be around $1 million, of which $500,000 will be provided by the Office of the Secretary from this Fund. An additional $20,000 will be used for Secretarial awards to recognize employees of units which have implemented particularly successful PEF projects.

An increase of $400,000 is requested for FY 1991 to establish a viable Total Quality Management (TQM) program within the Department. The goal of this program will be to promote the timely delivery of high-quality, error-free, cost-effective products and services using delivery systems that are responsive to customer needs both within and outside of the Department. Funding will be used to educate managers, supervisors and employees in the concepts and practices of TQM while implementing new procedures designed to create an environment that emphasizes an improved way of performing the work with fewer errors resulting in greater customer satisfaction.

Distribution of change by object class:

The object class detail for the proposed increase of $920,000 is as follows:

Object Class	FTE-T	Amount
Other services		$920,000
Total	0	$920,000

Justification of Program and Performance

Subactivity: Office of Program Analysis

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,816	1,791	1,936	2,766	830
(FTE-T)	29	29	29	37	8

Objectives: The Office of Program Analysis provides staff support to the Secretary, Under Secretary, Assistant Secretaries, and bureaus to ensure that accurate information and alternatives are available for effective policy decisionmaking, that costs, benefits, and effectiveness are analyzed and considered, and that maximum accomplishment of the Department's diverse missions is pursued.

Base Program: The Office of Program Analysis carries out its functions through economic, statistical, and program analyses, through coordination of selected activities, and through participation in other managerial reviews.

Analyses are done at the request of the Secretary, the Under Secretary, Assistant Secretaries, or bureaus, for the internal development of policies, as well as to meet Congressional requests and to provide Departmental input to interagency, OMB, or Domestic Policy Council matters. Examples of topics that have been recently or are being addressed in analyses are:

Indian education programs and policies;

Opportunities for Indian economic development, such as through the creation of enterprise zones;

The effects of Federal programs and policies on conversion of wetlands to other uses performed in conjunction with the Fish and Wildlife Service for the Congress and in support of Presidential wetlands initiatives;

Preparation and presentation of oil and gas resource estimates that appropriately reflect the economic factors underlying such estimates;

Valuation of oil and gas production for royalty collection purposes in support of Minerals Management Service rule-making;

Technical support for the development of the Department's portion of the natural resource damage assessment plan for the Exxon Valdez Alaskan oil spill;

Evaluation of alternatives for national air quality legislation;

Impact of climate change policies and responses on Department of Interior missions and programs and the contributions of bureau research and data collection activities to an understanding of climate change;

Interior contributions to the development of a national energy strategy;

Development and analysis of alternatives to finance stewardship of Federal lands and natural resources;

Federal fire management policies and their application; and

Alternatives for cost-sharing for Auburn dam.

The Office participates in the review processes for regulations, legislation, budget development and controlled correspondence to ensure a comprehensive, consistent Departmentwide approach. The Office brings its analytical skills and a cross-cutting perspective to issues that emerge in these review processes. In this role, the Office is alert to opportunities for intra-departmental coordination and facilitates communication and cooperation among individual bureau programs which jointly impact key issues such as wetlands preservation.

The Office coordinates Departmental implementation of Executive Orders 12291 and 12498 on regulatory review and planning. These Orders mandate the review of alternative approaches to regulations to promote greater efficiency and to reduce costs imposed by the Federal government on non-Federal entities. The Office coordinates the preparation of the annual regulatory plan, works closely with the bureaus to identify significant and major regulations, and assists bureaus in preparing economic analyses of selected significant regulations. This function is proposed to be strengthened in 1991.

The Office serves as an active participant in other managerial processes to identify policy issues or inconsistencies, to ensure the quality and completeness of work, and to add technical analyses where needed. For example, the Office reviews and comments on testimony and reports on proposed legislation and reviews responses to correspondence and decision documents moving through the Department's internal approval process. In 1989 this included reviewing approximately 900 documents, and current estimates call for about the same number in 1990 and 1991.

The Office coordinates policy issues which affect more than one bureau to develop departmental positions and policies. For example, during 1989 the Office has:

> Represented the Department in discussions on the energy provisions of the U.S.-Canada Free Trade Agreement and the Natural Resources Group of the GATT;
>
> Assisted in formulating the Department's policies regarding irrigation drainage contamination in the San Joaquin Valley;
>
> Provided staff support to the President's OCS Leasing and Development Task Force;
>
> Represented the Interior Department in meetings setting up an intergovernmental panel on climate change;
>
> Led in the development of strategies for Departmental compliance with Superfund laws and regulations. This involved coordinating planning, budgeting, and legal and policy issues in the identification and clean-up of Departmental hazardous waste sites, a task that will now be done more thoroughly by the Office of Environmental Project Review.
>
> Provided assistance on economic analysis methods to the Natural Resource Damage Assessment Team addressing the effects of the Exxon Valdez Alaskan oil spill on resources within the Department's jurisdiction;
>
> Provided technical support to bring the Department's natural resource damage assessment regulations into conformance with the recent D.C. Court of Appeals ruling;

Drawing on its technical expertise and capabilities, the Office will be working on the following in 1990 and 1991:

> Assisting the Interior Council on Global Climate Change with the development of a coordinated Departmental climate change research program;
>
> Providing staff support to the Department's Water Policy Council and on such issues as Indian water rights settlements, national water quality, and wetland preservation;

Analyzing opportunities for increased recreational use of Federal lands and for environmentally sound multiple use stewardship;

Providing support to the Secretary for Cabinet Council and other interagency discussions of cross-cutting issues involving economic, domestic or international policies such as climate change, public land management, energy supply, and air quality; and

Assisting the Department in developing policy and implementation responses to address deficiencies highlighted in the Senate Select Committee on Indian Affairs report.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,936	2,766	830
(FTE-T)	29	37	8

The increase of $830,000 and eight workyears requested for FY 1991 consists of three elements:

o Two FTE's and $500,000 to provide departmental staff support, analysis, and coordination for climate change;

o Four FTE's and $210,000 to strengthen direction of the Department's regulatory review process and analysis of regulations, both internal and external;

o Two FTE's and $120,000 to support energy and natural resource studies and to undertake economic analyses of international trade, mineral leasing and royalties, and related programs.

Global Climate Change

There is increasing concern that human activities (such as those resulting in increased concentrations of greenhouse gases) coupled with natural forces could result in global and climatic change. This could have significant impacts on natural resources and the environment. Recognizing this, President Bush has committed the Administration to protecting the global environment including addressing the issues of global warming, exploring methods to limit greenhouse gas emissions, and exploring other measures that could provide insurance against the potential consequences of global climate change such as short-term actions that may affect climate change and that can be justified for other reasons. Congress is also encouraging consideration of and action on climate change issues, with a number of bills under consideration. Within Interior, the growing recognition of the importance of global change on the Department's stewardship and management responsibilities has led to an upsurge of activity in both the scientific and policy aspects of global change.

In October, 1989, the Secretary created by Secretarial Order 3136 the Interior Council on Global Climate Change. The Council is chaired by the Under Secretary, and its membership includes the Assistant Secretaries and the Solicitor. The Council has responsibility to assist in coordinating bureau viewpoints and research planning, to provide a focal point on global climate change with other Federal entities and international organizations, and to advise and assist the Secretary in developing and implementing strategies.

As an active member of the Committee on Earth Sciences, Interior has participated in planning and developing the interagency global climate change research program. The Department has identified that over $200 million are spent annually by eight bureaus on activities contributing to, but not necessarily focused on, an understanding of global change. Based on the Committee on Earth Sciences review, the various bureaus have incorporated focused global change research activities in their FY 1991 budget submissions totalling more than $40 million.

At the same time, there has been a substantial increase in policy-related activities bearing on global and climate change at both the national and international levels. An Intergovernmental Panel on Climate Change (IPCC), with the active encouragement of the U.S. Government, was convened in November 1988. The U.S. Government regards the IPCC as the premier body for such discussions and has actively campaigned to obtain similar recognition for the primacy of IPCC from other governments and intergovernmental bodies. For the same reason, the U.S. successfully sought and obtained the Chairmanship of the Response Strategy Work Group (RSWG) of the IPCC. The RSWG is deemed to be crucial because its deliberations are expected to have a major influence on any international and national policies on greenhouse gases--actions which would have major consequences for this, and other, Departments. The RSWG is producing reports on actions that could be used to mitigate the effects of climate change on water resources, land use, managed and unmanaged ecosystems, agriculture, forests and biodiversity, wetlands, fisheries, etc. The breadth and scope of the IPCC's activities and their possible future impact on DOI's stewardship and management responsibilities make it imperative that Interior not only track those activities, but that it actively contribute to IPCC and its subgroups' deliberations.

The U.S. Government is also committed to negotiations for an International Convention on Climate Change in FY 1991. Such a convention could ultimately lead to protocols (i.e., international actions) on a wide range of matters including limiting greenhouse gases, and land, water and natural resource management. These actions would clearly affect Interior's responsibilities as the manager of this Nation's natural resources, and how it discharges these responsibilities.

The objectives of this Office's proposed effort are: 1) to coordinate the Department's activities related to global change to assure that activities within bureaus complement and supplement each other, and to assure that there is no duplication of effort; 2) to track, monitor and actively participate in the activities of the Intergovernmental Panel on Climate Change (IPCC's) Response Strategy Work Group (RSWG), especially the Resource Use and Management Subgroup which deals with water, land and other natural resources, biodiversity, natural and managed ecosystems, and forestry; 3) to serve as the Department's representative to IPCC and other intergovernmental and interagency task forces dealing with climate change policy; 4) to coordinate input and activities from the various bureaus; 5) to conduct a limited amount of policy analysis to support upcoming deliberations on a climate convention; and (6) to furnish staff support and report on global change activities to the Interior Council on Global Climate Change.

Regulatory Review

An increase in resources for the Office of Program Analysis is requested to strengthen the regulatory analysis function of the Department. The additions needed are four FTE's and $210,000. Limited review functions are now performed in the Office on an exception or "triage" basis (focusing only on the most serious or problematic). This increase will permit a better coordinated, comprehensive review of a bureau's policy, programs, decision processes, management progress, legislation and regulations rather than the current limited, disjointed review. A specialist on the programs of each bureau will technically analyze regulations proposed by that bureau for compliance with legislative intent and program objectives.

Recognition and analysis of issues, consistency with the law and other regulations, and compliance with programmatic policies and guidelines are the objectives of this process. Issues of particular interest are those that cut across multiple cabinet agencies, appear to have significant economic impacts or reporting burdens on industries or communities, have significant environmental implications, are likely to generate Congressional interest, may be of interest to one or more State governors, may become involved in or result from litigation, or are likely to come to the attention of the Secretary for other reasons.

Compliance with Executive Order 12291 requires that agency rules be examined for their economic effect. The staff increase will allow the Office to fully review those regulations covered by the Executive Order, rather than the current review by exception. Executive Order 12498 requires the Department to publish a list of significant regulations it plans to work on in the coming year. Again, the staff increase will permit a regular, thorough review of these significant regulations--those with heightened public impact and scrutiny.

Energy and Economic Studies

The increase of $120,000 and two positions is requested to permit a broader range of policy issues and options to be more thoroughly developed and scrutinized. These fall in several areas: energy production and transmission, international trade, energy conservation, and environmental implications.

The office will expand its efforts in the analysis of the economic relationship between energy conservation measures and the Department's energy development programs. It may also need to expand its provision of assistance to the Minerals Management Service on economic analysis methods for use in the development of the new 5-year OCS leasing program. Resources are needed to assure that the staff can provide economic analysis of energy and environmental policy issues that are expected to arise in FY 1991 and will have substantial effects on Interior programs and policies. These issues include Interior programs affected by the National Energy Strategy developed by the Department of Energy, a National Wetlands Policy on which a working group of the Domestic Policy Council has begun work, and analysis of proposals emerging from the Interior Working Group on Water Resources Policy.

The impending decline of oil production from Alaska's Prudhoe Bay oil fields, continued moratoria on offshore drilling, increases in oil imports, and continued concern about tanker traffic could have significant effects on several DOI bureaus and programs. In addition, the United States has taken a substantial leap forward in energy diversification including increased natural gas and coal consumption as well as new energy technologies that can allow greater reliance on domestic resources--including those from Federal lands. Increased demand for all forms of energy is expected, especially for electricity as we move towards a high technology economy. Also, of key concern to the Department are transmission issues, including lines across Federal lands, and the consideration of potential health problems from electromagnetic fields.

International trade issues will increase as a concern for the Department including gas pipelines and electricity lines from Canada, all products from the Caribbean, and the impact on natural resources trade from recent events in Eastern Europe. Tax policies, royalty issues including revenue impacts, energy development needs, employment impacts, and environmental impacts on oil, gas, and coal operations will also require attention.

Distribution of change by object class:

The object class detail for the proposed increase of $830,000 and eight workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	8	$330,000
Personnel benefits		60,000
Travel		116,000
Communications, utilities, and miscellaneous charges		10,000
Printing & reproduction		25,000
Other services		244,000
Supplies & materials		13,000
Equipment		32,000
Total	8	$830,000

Justification of Program and Performance

Subactivity: Office of Budget

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,957	1,930	2,049	2,049	0
(FTE-T)	32	32	32	32	0

Objectives: To plan and coordinate the development, presentation and management of Department of the Interior budgets designed to meet the legislative mandates and changing program responsibilities of the Department.

Base Program: Each year the Office of Budget directs the Department's initial budget formulation process by setting forth the standards for, and timing of, bureau submissions and by helping to ensure that necessary analyses and support data are provided for Secretarial decision-making. Once the Secretary's decisions are made, the Office prepares the Secretary's transmittal package and directs the preparation of bureau estimates and supplementary information for submission to the Office of Management and Budget (OMB). When OMB's initial passback is received, the Office analyzes the OMB recommendations and works with the bureaus and program assistant secretaries to recommend and direct the preparation of appeals when approved by the Secretary. The Office works with the bureaus and offices to reflect final budget decisions consistent with Presidential policy determinations, including the technical effort necessary to accurately portray the Department's estimates in the Budget Appendix.

Once final budget decisions are made, the Office coordinates preparation of Congressional appropriations justifications for each bureau and office. For example, 16 separate justifications were prepared for the 1990 appropriations request. The Office also prepares the Interior Budget in Brief/Highlights Book, which provides a concise yet comprehensive analysis of the President's budget request for the Department and includes subjects of particular interest to the Congress, the media, interest groups and the general public. Working with the Office of Public Affairs, the budget staff prepares for, and provides staff support to, the Secretary for the press conference announcing and explaining the President's budget.

Once the Department's budget justifications are provided to the Congress, the Office staff prepares opening statement and budget briefing materials for the Secretary's appearance at Congressional budget hearings, and works closely with bureau staffs to prepare and review the proposed testimony of other Department witnesses for Appropriations Committees hearings. For the 1990 budget, about 25 bureau-specific hearings were held, in addition to four Secretarial hearings. The Office also provides support for the Committee budget tracking data base system.

The Office of Budget staff attend all appropriations hearings and aid Congressional decision-making by working with the bureaus to provide additional fact sheets, capability and effect statements, and answers to questions submitted for the record by members of Congress. For example, over 200 inserts for the record, over 3,100 written answers to questions submitted by the House and Senate Committees, and approximately 1,800 capability statements were either prepared or reviewed by the Office of Budget in connection with the 1990 appropriations process. In addition, the Director of Budget appears as a technical witness at all appropriations hearings.

Once Congress completes action and Departmental appropriations become law, the Office of Budget is responsible for directing the apportionment of funds to bureaus and offices as well as monitoring compliance with the general provisions and directives contained in the Appropriations Committees reports. The Office also works with OMB to carry out the sequestration process provided for by P.L. 99-177 in years when it's needed, such as in FY 1990. The staff assists Interior bureaus in complying with Congressional directives. Throughout the fiscal year, the staff analyzes and recommends actions on proposed budget requests for supplemental appropriations, budget amendments, reprogrammings (including reorganizations), deferrals, rescissions, apportionments, and reapportionments.

As with all budget offices, these formulation, presentation, and budget management activities are ongoing, but often relate to three different fiscal years at the same time. Therefore, it is not unusual for the Office to be simultaneously involved in reviewing supplemental budget requests, preparing and reviewing materials for the budget year request before Congress, and preparing analyses that evaluate recommendations for the subsequent year's budget.

The Office also provides objective reviews and analyses of the execution of the Department's budget. Comparative analyses of the original budget estimates to final approved and executed budgets are made in selected categories and program areas to provide a basis upon which future Departmental budgets may be more accurately formulated.

The Office of Budget is also responsible for overseeing general budget activities throughout the Department, including the review of budget materials developed by the bureaus and offices in the Department and the preparation of summary analyses and tables reflecting the overall level of resources available to the Department. In addition, the Office reviews Departmental correspondence and responses to reports or inquiries with resource implications from the General Accounting Office, Congress, and others for accuracy and consistency with Administration and Congressional budget decisions and directives.

In addition to these budget-related activities, the Office staff works on a wide variety of other resource-related assignments which are vital to the operation of the Department. Examples of such activities include:

Reviewing and making recommendations on over-appraisals, declarations of takings, and other land acquisition proposals which are submitted to the Appropriations Committees;

Reviewing and making recommendations on proposed authorizing legislation with budget implications;

Drafting, analyzing and coordinating intradepartmental review of appropriations language;

Updating or providing supplementary directions to the Budget Handbook which is used by budget staffs throughout the Department;

Developing or reviewing budget structure changes pursuant to Congressional and Office of Management and Budget direction to more accurately reflect current or proposed operations in a particular bureau;

Monitoring and analyzing program and fiscal progress of the bureaus in carrying out what has been justified in their budgets and approved by Congress;

Making recommendations on staffing (FTE) levels and monitoring and reporting FTE usage throughout the Department;

Preparing regular reports on receipts, travel, outlays, personnel details, and consultant utilization; and

Participating in a variety of ad hoc or special assignments such as the Department's task forces involving Indian water rights settlements and conducting reviews and making appropriate budget analyses in areas including office space costs and costs of the Department's hazardous materials management and drug eradication programs.

The Office has been a leader within the Department in using computer technology both for presentation of budgetary data and as a decision-making facilitator for new budget requests. In this regard, detailed review of and decision making for, the 1991 budget review within the Department was carried out by the assistant secretaries and the Secretary using computerized data and other information formulated and presented by this office.

No increase in funds is requested for 1991.

Justification of Program and Performance

Subactivity: Financial Management

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,162	1,146	1,218	1,468	250
(FTE-T)	18	18	18	19	1

Objectives: The Office of Financial Management provides direction, planning, and oversight for Departmentwide financial policy and procedures, financial data gathering and reporting, the management control (Federal Manager's Financial Integrity Act) program, accounting systems and accounting policy, and provides staff advice and assistance to the bureaus and offices in these functional areas. The Office serves as a focal point for Departmentwide financial management initiatives including management controls, payroll and accounting systems, debt collection, cash management, prompt payment of invoices, and timeliness and accuracy of financial reporting.

Base Program: The major functional areas of responsibility are outlined below:

Financial Policy and Procedures - Initiates, develops, and prescribes the Department's financial policies and procedures relating to such areas as debt collection; cash management; cost recovery; prompt payment; travel and transportation of employees; and the Department of Treasury's requirements for cash accountability, collections, depository and disbursing matters, letters of credit, and cash advances. Reviews and comments on proposed OMB and Treasury legislation relating to financial management; and participates in special governmentwide projects with OMB, Joint Financial Management Improvement Program (JFMIP), GAO, the Chief Finance Officer's (CFO) Council, and Treasury on financial management and management control improvement efforts.

Financial Data Gathering and Reporting - Analyzes, consolidates, and processes the Department's major recurring financial reports to Congress, OMB, Treasury, and other Federal agencies. Prepares special analytical reports, financial data, and Departmentwide financial reports for Departmental management, OMB, and others.

Management Control Systems - Provides policy guidance, technical support, and training to the bureaus and offices in support of the Federal Manager's Financial Integrity Act (FMFIA). Coordinates meetings of the Management Control/Audit Follow-up Council to review Departmental FMFIA policy, establishes priorities in reporting and correction of management control weaknesses, provides linkage between material weaknesses and funding of corrective actions, emphasizes the early warning potential of the management control process, prepares the Secretary's Annual FMFIA Report, and provides oversight on the FMFIA management control and reporting process.

Accounting Systems and Accounting Policy - Provides policy guidance and technical support to the bureaus and offices for the design, development, testing, and implementation of accounting, payroll, and management control systems throughout the Department. Attention is devoted to overseeing the implementation of the Department's off-the-shelf standardized accounting system in the bureaus, the strengthening of management control systems, and the improvement of cash management, debt collection, and payroll functions.

Major Planned Activities - During fiscal years 1990 and 1991, the major thrust of the Office will be in the areas of management control, financial systems, cash management, debt collection, cost recovery, prompt payment of bills, and other special studies. The Administration has given heightened emphasis to strengthening management controls. In order to provide more direct senior level involvement in this critical process, the Secretary delegated policy oversight responsibility to the Under Secretary. The Under Secretary created and chairs a Management Control/ Audit Follow-up Council. The five line Assistant Secretaries have established similar councils to provide top management involvement with and oversight of their management control programs. The responsibility for Departmentwide implementation of FMFIA is delegated to the Office of Financial Management.

The ongoing activities of the Office of Financial Management in 1991 include the following: providing policy guidance, training, and quality assurance for bureau and office compliance with OMB Circular A-123 on management controls and FMFIA; providing policy guidance and coordinating Departmental submissions required by OMB Circular A-127 on financial management systems; issuing policy and monitoring bureau compliance with the Prompt Payment Act and OMB Circular A-125; coordinating Departmental responses to draft GAO reports relating to financial management issues and financial systems; monitoring, providing policy and providing assistance on bureau debt collection and cash management programs; maintaining Departmental liaison with JFMIP, GAO, OMB, CFO Council, and Treasury on financial management issues and systems; providing guidance for the development and implementation of the standard

Departmentwide accounting system; monitoring the development of the Federal Payroll/Personnel System (FPPS); developing or expanding policies and procedures on travel; strengthening bureau compliance with the Department's cost recovery policies; reviewing Departmental accounting systems to assist in improving operations; controlling the Department's unemployment, worker's compensation, and overtime costs; and fulfilling periodic financial reporting requirements. The aforementioned standard accounting system has been implemented in the Bureau of Reclamation and the U.S. Geological Survey and is currently being implemented at the Bureau of Mines and the Fish and Wildlife Service. The remaining bureaus will be implemented on a time phased basis.

Major Accomplishments - Recent major accomplishments of this Office include: (1) implemented the standard accounting system at the U.S. Geological Survey and the Bureau of Reclamation in FY 1989; (2) guided the consolidation of administrative payment centers at the National Park Service and the Bureau of Indian Affairs during FY 1989; (3) led the governmentwide effort of the Internal Control Interagency Coordination Council that reviewed and recommended improvements to FMFIA and OMB Circular A-123's management control requirements and processes (report issued July 1989); (4) provided oversight and guidance to the bureaus in identifying 134 material control weaknesses and correcting 109 these weaknesses from 1983 to the end of FY 1989; (5) generated savings of $35 million through cash management initiatives between 1983 and the end of FY 1989, with about $6.6 million in savings during FY 1989; (6) generated savings of $6.1 million in unemployment compensation costs from January 1986 through September 1989, with $1 million in savings during FY 1989; (7) led an effort to control Departmentwide overtime costs; and, (8) led an effort to reduce worker's compensation costs which resulted in estimated savings of $1.7 million between April 1987 and the end of FY 1989.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,218	1,468	250
(FTE-T)	18	19	1

This Office has initiated several major financial improvement projects which have generated substantial savings including: (1) leading a government-wide study that resulted in making the management control process less paper intensive and more meaningful to managers; (2) reviewing and monitoring costs associated with unemployment and worker's compensation programs; (3) expanding and strengthening cash management operations; (4) improving the Department's debt collection process; (5) reducing overtime costs; and (6) overseeing the development and implementation of the Departmentwide accounting system.

The proposed FY 1991 budget increase will fund an additional position in the Division of Financial Systems and provide contractor assistance to adequately address the high Administration priority of strengthening management control systems.

Given this heightened emphasis on strengthening governmentwide management controls, additional resources are necessary to enhance existing oversight, training and assistance capabilities of the Office of Financial Management. The $250,000 increase requested will be used to support one additional position and provide funds for acquiring contractor assistance for: (1) conducting internal control evaluations of areas of concern to the Department, (2) reviewing selected management control evaluations conducted by internal staffs, and (3) providing additional training and assistance to organizational units in highly vulnerable areas. Additional travel funds are required to conduct on-site training, evaluations and assistance.

The benefits derived by the additional funding are expected to reduce the risk of unidentified fraud and waste by: (1) achieving broad-based management support through more direct involvement with FMFIA and associated requirements and through additional training on the requirements of FMFIA and the importance of and effective use of control techniques as a means of preventing fraud and waste, and (2) improving the consistency of the Department's management control program by conducting selected reviews of control evaluations, risk assessments, and completed corrective actions to provide reasonable assurance that each phase of the program is thorough, efficient, and effective.

The Department of the Interior has been a governmentwide leader in the effort to improve management controls. The requested position, contractor assistance, and travel resources will ensure that the Office of Financial Management will be able to fulfill the objective of strengthening the management control program of the Department.

Distribution of change by object class:

The object class detail for the proposed increase of $250,000 and one workyear is as follows:

Object Class	FTE-T	Amount
Personnel compensation	1	$70,000
Personnel benefits		10,000
Travel		20,000
Other services		150,000
Total	1	$250,000

Justification of Program and Performance

Subactivity: Security and Drug Enforcement

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	667	658	709	759	50
(FTE-T)	13	13	13	13	0

Objectives: The objectives of the Office of Security and Drug Enforcement are to carry out the Secretary's responsibilities for the development, justification, and implementation of management programs in the area of security, drug, and law enforcement, and for policy, direction, coordination, evaluation, inspection, and support of three Departmentwide programs: security, law enforcement and emergency preparedness.

The drug interdiction and eradication program includes the development of policies, procedures, and systems which will assure the adequate establishment of guidelines, goals and objectives, regulatory controls, schedules, directives, and evaluation plans. Included, also, is monitoring changes in policy, position, and program planning, and relating these changes to management and technical practices, and assuring adequate attention to developing new or revised policies and programs to enhance operating results of the Department's drug program.

The security program includes personnel clearances and all physical, industrial, and classified document accountability and control. The security program maintains Departmentwide staff coordination for the receipt, transmission, monitoring, and disposition of Reports of Investigation from the Federal Bureau of Investigation, Office of Personnel Management, other Departments, and agencies, and operates the personnel clearance and suitability investigative requirements programs for the Secretariat and Heads of Bureaus and Offices. The Office of Security and Drug Enforcement provides the only Top Secret control office and operates several highly classified programs requiring two separate Sensitive Compartmented Information Facilities. The emergency preparedness program provides executive direction and overall supervision of Departmentwide emergency activities to ensure the preservation of continuity of operations and performance of essential functions in a period of national, natural, or man-made emergency.

Base Program: The Office of Security and Drug Enforcement provides operational guidance and assistance to all employees of the Department in the areas of security, law enforcement, and emergency preparedness. In 1989, these programs provided training, technical assistance, and related services to employees throughout the Department as well as other Departments and agencies. The Office of Security and Drug Enforcement conducted three security inspections in 1989, four regional national security emergency preparedness program staff and site inspections, 102 name checks for the Federal Bureau of Investigation, 385 personnel background investigations; processed 2,207 classified documents (945 received, 1,262 destroyed); and adjudicated 4,332 National Agency Check and Inquiries, National Agency Check, Inquiries and Credit's, and National Agency Check and Credit's.

Key tasks to be performed in 1990 and 1991 are:

(1) Drug eradication and interdiction program: Assure that overall Secretarial policy direction is implemented throughout the Department. Conduct periodic meetings with all other Federal offices as it concerns drug enforcement, i.e., DEA, Customs, Border Patrol. Facilitate all intergovernmental requests for manpower and technical assistance received from bureaus and offices. Chair and coordinate the Enforcement Working Group periodic meetings among all bureaus and offices. Provide attendance and input to the National Drug Policy Board and the Justice Department. Review and assist the bureaus and offices on a continuing basis on proposed legislation as it pertains to drug enforcement.

(2) Security, law enforcement, and emergency preparedness programs: Conduct four security inspections, conduct three national security emergency preparedness program staff and site inspections, process 2,250 personnel security clearances, and adjudicate for the Office of the Secretary 350 security actions. Conduct three field evaluations for compliance with Departmental policy on law enforcement programs, equipment and facilities. Coordinate planning and prototype development for the implementation of the National Incident Based Reporting System (NIBRS). Conduct internal control reviews for all Bureaus with statutory law enforcement authority. Complete standardization of law enforcement vehicles in conjunction with the Office of Acquisition and Property Management. Coordinate departmental drug reduction policy implementation, and bureau policy development.

Increase from 1991 base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	709	759	50
(FTE-T)	13	13	0

The Uniform Federal Crime Reporting Act of 1988, P.L. 100-690, mandates "the Federal Bureau of Investigation to compile nationwide criminal statistics for use in law enforcement administration, operation, and management and to assess the nature and type of crime in the United States."

To meet the requirements of the amended law, a consolidated request of the Fish and Wildlife Service, the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, the Bureau of Indian Affairs, and the Office of Security and Drug Enforcement was formulated for a total of $4,370,000 for FY 1991. The $50,000 portion of this package is a key to the success of the DOI part of the program.

The new National Incident Based Reporting System (NIBRS) requires considerable computer program expansion and refinement over current existing DOI capability. The requested $50,000 will provide the needed additional telecon services, data lines, software development, hardware retrofit, magnetic tape development, main frame administrative service's increase, etc. The Department will provide the base technology, program and support services to each of the Bureaus in support of this reporting system.

Distribution of change by object class:

The object class detail for the proposed increase of $50,000 is as follows:

Object Class	FTE-T	Amount
Communications, utilities, and miscellaneous charges	0	$17,000
Other services		15,000
Equipment		18,000
Total	0	$50,000

Justification of Program and Performance

Activity: Hearings and Appeals

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	5,988	5,904	6,263	6,263	0
(FTE-T)	100	100	100	100	0

Objectives: The Office of Hearings and Appeals (OHA) is assigned the quasi-judicial and appellate responsibilities of the Department. Administrative Law Judges and three designated boards of appeal render decisions in cases pertaining to public and acquired lands and their resources, including land selections arising under the Alaska Native Claims Settlement Act, surface mining, contract disputes, appeals from determinations of the Bureau of Indian Affairs, and Indian Probate matters.

The Director decides all other appeals to the Secretary which do not lie within the appellate review jurisdiction of an established appeals board and are not specifically excepted in the delegation of authority to the Director. The Director may appoint OHA judges to conduct hearings and may appoint ad hoc boards of appeal. Some of the cases disposed of in this manner are appeals pertaining to relocation assistance benefits determinations, rental rate adjustments and decisions of judges in cases involving the Endangered Species Act, and other special cases. The decisions rendered by the Director or by the boards of appeal are final for the Department.

Other duties of the Office include responsibility for personnel grievance appeals and the assignment of personnel to hold hearings under the Debt Collection Act, and rulemaking hearings or other public hearings required by law or regulation.

Base Program: The following program areas comprise OHA activity:

Contract Appeals - The Board of Contract Appeals conducts hearings and issues decisions required by the Contract Disputes Act of 1978, P.L. 95-563. This Act provides for appeals relating to government contracts, whether expressed or implied. The Board also has jurisdiction to hear and decide such disputes arising prior to the Act and other contract related disputes pursuant to authority granted in the Indian Self-Determination and Education Assistance Act Amendments of 1988 (102 Stat. 2285).

New appeals docketed by the Board decreased to 255 in FY 1989. New appeals for FY 1990 are expected to remain at the current level and then increase by 10 percent in FY 1991 to 280. Due to a reduction from 5 judges to 4, the Board's case dispositions are expected to decrease from 300 in FY 1989 to 240 cases per year in FY 1990 and 1991.

Hearings Division: The Administrative Law Judges (Departmental) preside over hearings in all cases required by law to be conducted pursuant to 5 U.S.C. Section 554 (1982), and conduct hearings in other cases arising in the Department. The cases heard include those under the Mining Act of 1872, the Federal Land Policy and Management Act of 1976, the Surface Mining Control and Reclamation Act of 1977, the Endangered Species Act, and the Federal Oil and Gas Royalty Management Act of 1982.

Cases brought under the Surface Mining Control and Reclamation Act remained constant in FY 1989, but are expected to increase between now and 1991. The anticipated increase in surface mining cases is based upon a court order approving a settlement between the Department and plaintiffs in two far reaching cases which commit the Department to more rigorous enforcement, permitting, and assessment policies in the future. Individual Civil Penalty regulations are currently under review by the courts. It is expected that these rules will be upheld, resulting in additional appeals. Additionally, full implementation of the Applicant Violator System by Office of Surface Mining, Reclamation and Enforcement (OSMRE) is also expected to give rise to many additional hearings. Final regulations issued on October 22, 1987 by OSMRE (request for hearing on preliminary finding concerning a demonstrated pattern of willful violation, Section 510(c) of the Surface Mining Reclamation Act (30 U.S.C. Section 1260(c))) will also result in additional hearings by the Division.

The Administrative Law Judges (Indian Probate) in this Division conduct hearings and render decisions in Indian Probate matters. Historically approximately 2,200 estates were probated each year. However, last year an additional 700 probate cases were received raising the annual total to 2,900. This new level is not expected to decrease.

Enactment of legislation involving disputed titles to lands formerly owned by members of the White Earth Reservation is resulting in an increased caseload. Over the next five years it will be necessary to conduct between 300-1000 probate hearings annually for White Earth descendents.

In addition, the Bureau of Indian Affairs has requested and received a special budget authorization to help break the current logjam of cases pending throughout the United States. This authorization should result in an additional 6,000 cases being submitted for probate in FY 1992-1994.

Public Lands: The number of new cases filed with the Interior Board of Land Appeals (IBLA) varies considerably from year to year, though usually it is within the range of 700 to 1,000. In FY 1989, 733 appeals were filed. An increase of appeals to IBLA is expected in FY 1990 and FY 1991 as a result of promulgation of Individual Civil Penalty regulations and implementation of the automated Applicant Violator System by OSMRE. Expected promulgation of a new Valid Existing Rights (VER) regulation by OSMRE may also result in new surface mining appeals. In addition, the completion of new oil and gas royalty audits by MMS, combined with the pendency of over 500 royalty appeals before the Director, MMS, whose decisions thereon will be appealable to IBLA, should result in at least a 10 percent increase in MMS appeals to IBLA in both FY 1990 and FY 1991. The estimate of new appeals to IBLA for FY 1990 and FY 1991 is 850 per year.

Indian Matters: The Board of Indian Appeals (IBIA) decides appeals from actions taken by officials of the Bureau of Indian Affairs. In addition, the Board considers appeals from decisions rendered by the Department's Administrative Law Judges (Indian Probate) after hearings required by statute. The Board received 100 appeals in FY 1989 with 49 dispositions. The FY 1990 estimate is 150 appeals and 100 dispositions. The substantial increase in case filings has resulted from the final promulgation in FY 1989 of the rule permitting direct appeals to IBIA from decisions of BIA directors. This rule change will likely result in a further increase to as many as 175 new appeals in FY 1991.

Other Programs: The OHA is called upon to hold public hearings related to such environmentally significant matters as offshore oil and gas drilling, fire fighting policy and hunting regulations. As new administration initiatives are implemented, a substantial increase in public hearings is anticipated. Additionally, employees within the Office conduct personnel grievance reviews and hearings. The personnel grievance caseload for 1990 and 1991 is anticipated to remain between 45 and 50 cases each fiscal year. Resolution of appeals involving claims for relocation assistance benefits continue to represent a portion of the workload of the Office. It is estimated that adjudication of approximately six cases will be required in 1990 and 1991 under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646). Discussions are continuing with personnel of the Bureau of Reclamation (BOR) regarding OHA's adjudications of cases presently decided by the Commissioner of BOR regarding acreage limitation appeals. Appeal of the

Commissioner's decision of these cases will be handled by this office. The number of such cases cannot be determined at this time.

No increase in funds is requested for 1991.

Justification of Program and Performance

ACTIVITY: Aircraft Services

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	2,012	1,984	2,082	2,082	0
(FTE-T)	35	35	35	35	0

Objectives: The Office of Aircraft Services (OAS) was established to improve DOI aviation safety and aviation cost effectiveness and, as such, has Departmentwide responsibility and authority to: establish and maintain Departmental aviation operating standards; provide technical services support to bureaus for aircraft-related problems; provide acquisition and financial management support; improve aviation safety; and provide aviation training to DOI users to improve utilization and effectiveness of the program. These objectives, functions, and responsibilities are accomplished by OAS for all bureaus and offices in the Department.

To meet these objectives, OAS accomplishes the following: performs annual visits and approvals on approximately 87 DOI-owned aircraft; performs flight checks on approximately 175 DOI employees who have authorized pilot status for Departmental programs and official use; provides aircraft user safety training to approximately 3,000 DOI employees each year; inspects approximately 40 Interior aviation fuel sites in Alaska each year; awards and administers over 150 contracts annually; performs aviation safety inspections on more than 3,000 contract and rental aircraft, 2,225 private sector pilots and over 70 vendor facilities and sites to insure an adequate level of safety and the appropriate contract compliance; and provides various other aviation services as requested by Interior offices and bureaus.

OAS also investigates an average of 10 aircraft accidents each year and investigates or looks into about 500 other aviation mishaps each year. The recently revised Aircraft Accident Prevention Program and its' Aviation Mishap Information System (AMIS) has substantially increased the reporting of mishaps which include, aircraft accidents and incidents, aircraft maintenance deficiencies, and aviation hazards on all DOI aircraft activities. Draft directives of updated safety reporting and investigation procedures were published in December 1989. Accident prevention is a major theme throughout this activity.

The Interior bureaus and offices benefiting from the aircraft service organization are intimately involved in meeting many of the Department's priorities. Aircraft are often used in accomplishing Departmental objectives and programs. If DOI did not address this aviation safety and effectiveness issue at the Departmental level, many DOI programs and activities within the bureaus could possibly end up using less safe or less efficient aviation resources, or they would have to develop this level of expertise within each bureau.

OAS continues to support the user pay/cost recovery process through its centralized procurement of aviation services through the Working Capital Fund with full costs being recovered from the appropriate user bureau or from the various entities cooperating with DOI bureaus. This full cost includes OAS administrative costs (exclusive of this direct appropriation) related to the procurement and payment for aviation services, as well as a complete accounting of the costs and a supporting aviation management information system.

Base Program: The OAS "program" provides centralized, cost-effective, and safe aviation support to the requesting bureaus and offices. The base program involves all aspects of the OAS organization in order to achieve the objectives outlined above. The four major areas of activity within OAS that are wholly or partially funded through the Salaries and Expenses appropriation are as follows:

Promulgation of Departmentwide Policies and Procedures Governing DOI Aviation - Such activities include development, implementation, and maintenance of policies governing dual function and incidental pilots (including those with officially authorized DOI pilot status); development and maintenance of minimum standards for pilot qualifications; maintenance of policy prescribing aircraft certification requirements; and policies defining the safe use of aircraft.

Aviation Technical Services - This activity includes flight checking government pilots for proficiency; inspection and approval of DOI aircraft; development of technical specifications for aircraft contracting; research of specialized equipment requirements; review, flight checking, and approval of contract and rental vendor pilots; inspection and approval of vendor-supplied aircraft; advisory services with respect to cost/benefit comparisons of various equipment options; and assistance to bureaus in the field with respect to technical operational problems. Accomplishment of this activity necessitates that OAS keep a cadre of highly qualified aviation specialists who must maintain a current and high level of proficiency in their individual specialties.

Aviation Safety - This activity includes identification of hazards within a proposed or existing aviation operation, policy or procedure; providing DOI management with a risk analysis of aviation operations as a tool to assist them in developing sound aircraft accident prevention measures within their aviation programs; inspection and evaluation of aviation operations, including maintenance and fueling facilities and transportation of hazardous materials by aircraft; aircraft accident and incident investigation of all DOI aircraft mishaps; maintenance of aircraft accident and incident data and analysis thereof; and providing recommendations resulting from aviation mishap analysis which is oriented to aircraft accident prevention measures and the reduction of personnel injuries and deaths.

Planning for current and future years includes an increased emphasis on aircraft mishap prevention. A decreasing accident rate has been established as an aviation safety goal. This goal requires that the accident prevention effort be carried deeper into the DOI management structure at every level.

Aviation Safety Training - This activity includes aviation use, safety and management training for all DOI employees involved with aircraft programs. This training ranges from elementary safety through highly technical programs such as forest and range fire suppression activities, transportation of freight, hazardous materials, rappelling, helitorch and aviation management courses. The technical programs may also include in-depth training and standardization of DOI dual function pilots employed by various bureaus and offices of the Department. OAS safety and training personnel have presented both safety oriented and in-depth technical training programs to about 3,000 DOI employees each year. The effects of this training are evident by reduced DOI aircraft accident rates and the cost effective use of aircraft and related equipment.

Funds in this appropriation provide for the Director, his technical staff, the Aviation Safety Program and Aviation User Safety Training.

No increase in funds is requested for 1991.

Justification of Program and Performance

Activity: Central Services

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	15,854	15,632	16,888	20,033	3,145
(FTE-T)	0	0	0	0	0

Objectives: The Central Services activity supports all offices in the Secretariat funded by this appropriation and provides a single account for general overhead support costs.

Base Program: Central Services support covers administrative expense items which are not practical to distribute to the various offices in the Secretariat. Examples of items funded by this activity are as follows:

- Office space costs payable to the GSA;
- Employee Compensation and Unemployment Compensation Payments to the Department of Labor;
- General printing costs;
- Communications costs, such as FTS, telephone and postage;
- Working Capital Fund costs for the appropriation, such as health service costs, administrative overhead costs including fiscal, personnel and general services support, and other miscellaneous costs charged to the Office of the Secretary;
- Operation of motor vehicles used by the Secretariat;
- Maintenance and preservation of the Main Interior Building; and
- Other miscellaneous costs of a general nature.

In regards to efforts to restore and preserve the historic features of the Main Interior Building the following projects are planned for FY 1990 and FY 1991:

FY 1990

- o Restore conference rooms 7000A and B ($100,000) - This space was originally the art gallery but was converted to temporary office space during World War II. Subsequent renovations changed the configuration of the space and it is currently used as a conference facility. This project will remove inappropriate wall and ceiling finishes and restore the rooms to original appearance while incorporating modifications needed for the current use.

- o Replace floor directory boards ($15,000) - The original signage for the main corridor on each floor included a building plan and directory boards to list all occupants. Over the years the directory boards have been altered or removed to use the space for notices and signs. This project will fabricate notice boards in keeping with the style and finish of the original signs that will replace the remaining floor directory boards and any modern additions.

- o Restore the painted lobby ceilings and repair damaged ornamental plaster in corridor ceilings ($40,000) - Over the years, the lobby and vestibule ceilings have lost their intended design and color through misguided repaintings. Based on the Historic Structure Report's paint analysis and recommendations we will restore the ceilings to their appropriate configuration. Decorative hard plaster moldings and coves in the corridor ceilings have been broken and damaged in general locations. These will be repaired to match the original profiles.

- o Replace Interior signage in keeping with historic preservation guidelines ($80,000) - The current Interior signage is a hodgepodge of different types that have been installed over the last fifty years. This project would determine a building standard that meets the historic guidelines and then replace all nonconforming signs.

- o Refinish auditorium and library entrance doors ($6,290) - This woodwork must be cleaned and refinished in order to restore its appearance and prolong its life.

- o Erect totem pole ($15,000) - This project will install the new base for the totem pole, transport the pole from the warehouse and erect it in the lobby. This is a continuation of a project begun in FY 1989.

- o Repair ornamental clocks ($10,000) - The building system clocks in monumental areas (library, auditorium, etc.) are ornate brass with oversize numerals and hands. As they malfunctioned in the past, they were disconnected. This project will restore the clocks to operation and refinish them as needed.

- Restore museum display cases - first phase ($184,000) - Over the years, the exhibits displayed in the museum have changed several times. With each change various "modernization" efforts have occurred so that at the present time the original fabric of the display cases is totally obscured. This project would remove inappropriate materials, treatments and displays, restore the display cases and create new exhibits that would present the Department's mission in the proper setting.

- Install a new handicapped access ramp in keeping with historic preservation guidelines ($42,000) - The main entrance to the building (C Street) is not accessible to the handicapped. When GSA provided basic accessibility, they only installed one ramp and automatic doors at the E Street entrance, which is the back of the building. The museum, library, auditorium, Indian craft shop and Park Service information office are all located at the main entrance. The proposed location of the ramp will require close design coordination with the Historic Preservation Officer and the Planning Commission as it will affect the building facade.

- Museum restoration ($130,000) - Using the results of surveys previously conducted the design for the museum HVAC system will be started. This will ensure the proper climatic control to protect and preserve the artifacts, artwork and displays to be housed. In addition, the inappropriate floor tile will be replaced with a material more in keeping with the historic guidelines.

- Conserve artwork ($66,000) - Based on the recommendations of conservators needed conservation work will be undertaken on portraits of former Secretaries, artifacts and other exhibit items.

These projects have been programmed for accomplishment even though the total estimated cost ($688,290) exceeds the funding available. This will allow for good bids, where the award amount is less than the estimate. Based on past experience with these types of contracts, we would anticipate not exceeding the $600,000 available for this effort.

FY 1991

- Replicate and install original lobby lighting fixtures ($150,000) - In a campaign to modernize the lobbies of all Federal buildings GSA removed the original lighting fixtures from the Interior Building lobbies and installed modern halogen lighting. This project would fabricate replacements from the original drawings, using modern technology for improved energy conservation, color correction and illumination.

- o Clean, repoint and refinish auditorium stone and woodwork ($100,000) - This project would clean and repoint the limestone walls and columns, refinish the wood floor and paneling and clean the stone sculptures. In addition, the fixed seats would be repaired as necessary (they are original) and several rows converted to be removable to increase the use of the space. To minimize the time the auditorium would be out of service elements of several projects have been combined in one.

- o Clean, repoint and refinish library stone and woodwork ($40,000) - This project would clean and repoint the limestone walls and columns and refinish the walnut paneling and cabinetry.

- o Clean and restore conference room 8068 woodwork ($10,000) - This room was originally constructed as the broadcast studio and first used by the Voice of America. This project would clean and refinish the walnut woodwork in the room.

- o Restore museum display cases - second phase ($150,000) - This project will continue the effort to restore the display cases and create new exhibits that would present the Department's mission in the proper setting.

- o Light fixture reproduction ($150,000) - This project will continue efforts to replicate original lighting fixtures in the corridors on all floors including the basement, and floor lamps in the Secretary's Conference Room.

Increase from 1991 base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	16,888	20,033	3,145
(FTE-T)	-4*	-4	0

* Projected staffing efficiencies in FY 1991 are expected to result in a reduction of four FTEs. This lapse in positions is not displayed in any individual subactivity, but instead is reflected here as an overall reduction.

Of the requested increase of $3,145,000, $2,800,000 is needed to provide additional funds to assist in the preparation of the Avondale, Maryland site for the relocation of certain Interior offices to be housed there. The Department's FY 1990 Appropriations Act required the Secretary to designate which Interior component would occupy the site. On December 22, 1989, the Department informed the House and Senate Interior Appropriations Subcommittees that the Secretary had selected the Eastern State Office of the Bureau of Land Management (BLM), the Eastern Regional Office of the Inspector General (IG), and the Office of Hearings and Appeals (OHA) to relocate to Avondale.

In addition to housing BLM, IG, and OHA employees, the facility will be used for three other purposes. These include providing office and conference space for several Interior-supported Commissions and committees, establishing a cafeteria for Avondale employees and guests, and establishing a Departmental child care facility serving Departmental and other Federal employees.

As the result of making the selection of offices to locate at Avondale and for other reasons, the costs of this project have increased. A total of $6.5 million has been appropriated to the General Services Administration (GSA) for Avondale renovations, and this budget request includes an additional $2.8 million for this purpose. While we will be working with GSA on our estimates of the costs to meet the special requirements of the offices that have been selected, these costs will exceed the money appropriated and currently requested. We will provide the Committees with additional information as soon as it is available. The move to the renovated facility is projected to occur in the summer of 1993.

The remaining $345,000 is requested to modernize the Department's correspondence management process and establish the basic capability for automated executive information systems. Recent studies have concluded that the management and flow of executive correspondence through the Department would be much more efficient with the application of new technology. This new technology would enable an office to send and receive correspondence electronically, thus avoiding the duplication and delays in the current paperwork processes. Other benefits are anticipated in the areas of reduced costs associated with electronic storage of records and personal productivity improvement. Current Departmental issues and other executive information could also be processed by the proposed system. For FY 1991, $345,000 would be used for the analysis and design of an integrated Departmental system and for an initial investment in scanning and optical storage equipment.

Distribution of change by object class:

The object class detail for the proposed increase of $3,145,000 is as follows:

Object Class	FTE-T	Amount
Other services	—	$3,145,000
Total	0	$3,145,000

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
SALARIES AND EXPENSES

Program and Financing (in thousands of dollars)

Identification code 14-0102-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Program by activities:			
	Direct program:			
00.0101	Departmental direction	6,258	6,071	7,475
00.0201	Program direction and coordination	4,167	4,059	4,589
00.0301	Policy, budget and administration	15,561	16,681	21,634
00.0401	Hearings and appeals	5,591	5,904	6,263
00.0501	Aircraft services	1,813	1,984	2,082
00.0601	Central services	15,449	15,632	20,033
00.9101	Total direct program	48,839	50,331	62,076
01.0101	Reimbursable program	66,985	72,000	76,000
10.0001	Total obligations	115,824	122,331	138,076
	Financing:			
11.0001	Offsetting Collections from: Federal funds	(66,985)	(72,000)	(76,000)
25.0001	Unobligated balance lapsing	228	0	0
39.0001	Budget authority	49,067	50,331	62,076
	Budget authority:			
40.0001	Appropriation	49,067	51,045	62,076
40.0090	Reduction pursuant to P.L. 99-177	0	(714)	0
43.0001	Appropriation (adjusted)	49,067	50,331	62,076
	Relation of obligations to outlays:			
71.0001	Obligations incurred, net	48,839	50,331	62,076
72.4001	Obligated balance, start of year	6,994	5,400	5,033
74.4001	Obligated balance, end of year	(5,400)	(5,033)	(6,208)
77.0001	Adjustments in expired accounts	(752)	0	0
90.0001	Outlays	49,681	50,698	60,901

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
SALARIES AND EXPENSES

Object Classification (in thousands of dollars)

Identification code 14-0102-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Direct obligations:			
	Personnel compensation:			
111.101	Full-time permanent	24,390	25,591	29,150
111.301	Other than full-time permanent	817	927	937
111.501	Other personnel compensation	540	90	90
111.901	Total personnel compensation	25,746	26,608	30,177
112.101	Personnel benefits: Civilian	3,985	4,118	4,829
113.001	Benefits for former personnel	127	168	170
121.001	Travel and transportation of persons	862	1,009	1,221
122.001	Transportation of things	13	20	20
123.101	Rental payments to GSA	7,827	7,790	8,582
123.201	Rental payments to others	0	36	36
123.301	Communications, utilities, and miscellaneous charges	1,222	1,645	1,719
124.001	Printing and reproduction	514	460	529
125.001	Other services	7,154	7,907	14,120
126.001	Supplies and materials	488	490	502
131.001	Equipment	816	80	171
132.001	Land and structures	85	0	0
199.001	Subtotal, direct obligations	48,839	50,331	62,076
299.001	Reimbursable obligations	66,985	72,000	76,000
999.901	Total obligations	115,824	122,331	138,076

Personnel Summary

	1989 Actual	1990 Estimate	1991 Estimate
Direct:			
Total number of full-time permanent positions	580	584	616
Total compensable workyears: Full-time equivalent employment	568	595	627
Reimbursable:			
Total compensable workyears: Full-time equivalent employment	55	53	45
Average ES salary	$76,310	$79,086	$81,162
Average GS/GM grade	11.13	11.31	11.31
Average GS/GM salary	$34,550	$35,237	$36,162
Average salary of ungraded positions	$28,389	$28,557	$29,307

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
CONSTRUCTION MANAGEMENT

Appropriation Summary Statement
(Program and Performance)

This office has responsibility for assisting the bureaus and offices of the Department of the Interior in improving their performance in planning, designing, constructing and operating facilities. Since 1978, this program has focused its efforts on the Bureau of Indian Affairs (BIA) by providing direct and contract support in development and implementation of operational improvements in its facilities program.

In accordance with Congressional directives received in FY 1987, the role of the Office of Construction Management has been expanded from oversight and assistance activities to direct program management of BIA's facilities program.

The FY 1991 request proposes a funding level of $2,039,000 and 20 workyears which reflects an increase of $239,000 from the FY 1990 appropriation to fund this program in the Office of the Secretary.

Appropriation Language Sheet

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

CONSTRUCTION MANAGEMENT

For necessary expenses of the Office of Construction Management, [$1,800,000] $2,039,000. (Department of the Interior and Related Agencies Appropriations Act, 1990.)

Appropriation Language Citations

Appropriation: Construction Management

Appropriation language and citations:

1. For necessary expenses of the Office of Construction Management, $2,039,000.

43 U.S.C. 1451, 1457

This activity is authorized under the general authorization for the Office of the Secretary, 43 U.S.C. 1451, 1457 and Reorganization Plan No. 3 of 1950; 64 Stat. 1262, as amended 66 Stat. 121.

CONSTRUCTION MANAGEMENT
Justification of Base Adjustments
(Dollar amounts in thousands)

	FTE-T	Amount
Adjustment for Administrative Efficiency	0	-$ 4

The Department is proposing to decrease spending for consultants, travel, overtime, supplies, and equipment by about 5 percent to improve administrative efficiency and place greater priority on 1991 program initiatives. Specific reductions are proposed in the following areas:

Overtime	-$ 4
Total	-$ 4

	FTE-T	Amount
Adjustment for Staffing Efficiency	0	-$10

Savings are proposed from a planned reduction in the average grade achieved by filling vacant positions at an average of one grade lower than previously filled and from taking into account an expected additional lapse of 30 days before filling positions that become vacant in 1991. Specific reductions follow:

Average Grade	-$ 1
Lapse	- 9
Total	-$10

	FTE-T	Amount
Additional Cost in 1991 for the 1990 Pay Raise	0	+$ 36
Anticipated 1990 pay increase supplemental		0
Amount of 1990 pay increase to be absorbed		$ 28
Total cost in 1990 of pay increase		28
Adjustment for full-year cost in 1991 of 1990 pay increase		8
Total adjustment for 1990 pay increase		$ 36

The 1990 cost of $28,000 which covers three quarters of the full-year cost of the pay raise and which will be fully absorbed in 1990 and is for general schedule pay. An additional $8,000 will be required in 1991 to cover the full-year cost of the 1990 pay increase. This amount, $8,000, is for general schedule pay.

	FTE-T	Amount
Additional Cost in 1991 for the 1991 Pay Raise	0	+$ 10

The adjustment is for the additional amount needed in 1991 to cover 40 percent of the additional three quarter's cost of the estimated 3.5 percent pay raise effective in January 1991. This amount, $10,000, is for general schedule pay. The 1991 cost of the remaining 60 percent will be absorbed in FY 1991.

Rental Payments to GSA.. 0 +$ 37

The adjustment is for increased costs payable to GSA resulting from higher rates for office and non-office space.

Adjustment for CSRS/FERS Retirement Cost .... 0 +$ 5

The adjustment is for the increase in estimated retirement costs resulting from the continuing growth in the relative proportion of FERS employees in the office work force.

Adjustment for One Additional Paid Day in FY 1991 .... 0 +$ 3

The increase in personnel compensation results from there being one more paid day in FY 1991 than in FY 1990.

----- ------

TOTAL, BASE ADJUSTMENTS.............................. 0 +$ 77

Justification of Program and Performance

Activity: Construction Management

(Dollar amounts in thousands)

	FY 1990 Enacted To Date	FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Increase/ (Decrease) from Base
$	1,800	1,800	1,877	2,039	162
(FTE-T)	18	18	18	20	2

Authorization: 25 U.S.C. 13 and 25 U.S.C. 450 et. seq.

Objective: The Office of Construction Management (OCM) is responsible for assisting the bureaus and offices of the Department of the Interior in improving their performance in planning, designing, constructing and the operation and maintenance of buildings and related utility systems, roads, grounds, etc., necessary for carrying out Department programs. Major emphasis is placed on development of the management capabilities required for administration and management of the construction and facilities programs within the Department.

Base Program: In accomplishing this objective, the Office is responsible for development of management techniques, procedures and policies to improve the facilities programs within the Department; providing oversight, consultation, assistance and direction in implementation of operational improvements to facility planning, design, construction, operation, maintenance and repair of the construction and facilities programs; and serving as a focal point and liaison for facility management programs for the Department.

Significant progress has been made in meeting the five major program objectives established by both the House and Senate Appropriations Committees for the Bureau of Indian Affairs (BIA) Facilities Management Program:

- o Significant progress has been made in prioritizing, validating and planning procedures which have resulted in earlier identification of projects to accompany budget requests. These procedures have resulted in accelerated advance planning and obligations beginning earlier in the fiscal year in which appropriations became available.

- The facilities inventory was reduced by more than 760,000 square feet during FY 1988 with annual Operations and Maintenance savings of $400,000 and repair items savings of $7.0 million. The FY 1989 reductions were approximately 393,200 square feet.
- The final draft report on BIA Education was completed on March 17, 1988. This is a comprehensive analysis of BIA funded schools.
- Departmental and Congressional approval of the reorganization of the Office of Facilities Management in Albuquerque has been received; employees received personnel actions effective April 10, 1988, placing them in the new organizational structure. Recruitment of senior managers is essentially complete.
- A revised Operations and Maintenance (O&M) formula for allocating Operations and Maintenance funds has been developed, and was utilized to allocate FY 1990 funds.

These accomplishments have been possible through cooperative efforts between BIA and OCM. Accomplishments have been made with the overall objective of building the capacity in the Bureau to fully manage its own program in the future. Personnel and organizational development resources from a number of organizations including other Federal Agencies have been provided to Bureau managers to assist them in developing the institutional capability to fully manage the facilities program.

Increase from 1991 Base:

(Dollars in thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	1,877	2,039	162
(FTE-T)	18	20	2

An increase of 2 FTE's and $162,000 is requested to strengthen value engineering efforts Departmentwide. OCM has been designated as the Departmental coordinator of the Value Engineering Program. Resources are required in order to work with all bureaus which have construction programs to develop value engineering capability, respond to OMB reporting requirements, and develop and implement value engineering policy in the Department.

Appropriation: Salaries and Expen

Object Class	
11.0	Personnel Compensation:
11.1	Full-time permanent........
11.3	Other than full-time perma
11.5	Other personnel compensati
	Total personnel compensati
	Other Objects
12.1	Personnel benefits: Civili
13.0	Benefits for former person
21.0	Travel and transportation persons.................
22.1	Transportation of things..
23.1	Rental payments to GSA....
23.2	Rental payments to others.
23.3	Communications, utilities, miscellaneous charges...
24.0	Printing and reproduction.
25.0	Other services...........
26.0	Supplies and materials....
31.0	Equipment................
	Total requirements........

Office of the Secretary
Summary of Requirements by Object Class

(Dollar amounts in thousands)

	1991 Base		1991 Estimate		Increase/(Decrease)	
	FTE	Amount	FTE	Amount	FTE	Amount
s						
	580	27,282	616	29,150	36	1,868
nt	11	937	11	937	0	0
	0	90	0	90	0	0
	591	28,309	627	30,177	36	1,868
		4,530		4,829		299
l		170		170		0
		971		1,221		250
		20		20		0
		8,582		8,582		0
		36		36		0
nd						
		1,669		1,719		50
		468		529		61
		8,393		14,120		5,727
		467		502		35
		75		171		96
		53,690		62,076		8,386

OFFICE OF THE SECRETARY
Construction Management
Summary of requirements
(Dollar amounts in thousands)

Appropriation: Construction Management

	FTE-T	Amount	FTE-T	Amount
Appropriation enacted, 1990			18	1,800
Reduction Pursuant to P.L. 99-177			0	0
Adjusted FY 1990 Appropriation			18	1,800
ADJUSTMENTS TO BASE:				
Adjustment for 1990 Impact of P.L. 99-177		0		
Adjustment for Administrative Efficiency		-4		
Adjustment for Staffing Efficiency		-10		
Additional Cost in 1991 for the 1990 Pay Raise		36		
Additional Cost in 1991 for the 1991 Pay Raise		10		
Adjustment for Rental Payments to GSA		37		
CSRS/FERS Retirement Costs		5		
Adjustment for One Additional Paid Day in FY 1991		3		
Total adjustments to base			0	77
1991 Base Budget			18	1,877
Program changes (Changes to base budget, detailed below)			2	162
TOTAL REQUIREMENTS (1991 Estimate)			20	2,039

Comparison by activity/ subactivity:	FY 1989 Actual		FY 1990 Enacted to Date		P.L.99-177 Reduction	1990 Adjusted Approp.	FY 1991 Base		FY 1991 Estimate		Inc./(dec.) from FY 1990 Appropriation		Inc./(dec.) from 1990 Adjusted Appropriation	Inc./(dec.) from 1991 Base	
	FTE-T	Amount	FTE-T	Amount	Amount	Amount	FTE-T	Amount	FTE-T	Amount	FTE-T	Amount	Amount	FTE-T	Amount
Construction Management, Total Requirements	16	1,757	18	1,800	0	1,800	18	1,877	20	2,039	2	239	239	0	162

Value Engineering is a systematic approach using engineering techniques to analyze the functions of systems, equipment, facilities, and supplies to generate alternatives which will achieve the essential functions at the lowest life cycle cost consistent with required performance, reliability, quality and safety. Value engineering is a means for Federal contractors and Government entities to change the plans, designs and specifications for Federal programs and projects in order to lower the Government's cost for goods and services and maintain necessary quality levels.

Distribution of change by object class:

The object class detail for the proposed increase of $162,000 and two workyears is as follows:

Object Class	FTE-T	Amount
Personnel compensation	2	$80,000
Personnel benefits		15,000
Travel		26,000
Communications, utilities, and miscellaneous charges		3,000
Other services		29,000
Equipment		9,000
Total	2	$162,000

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
CONSTRUCTION MANAGEMENT

Program and Financing (in thousands of dollars)

Identification code 14-0103-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Program by activities:			
10.0001	Total obligations	1,847	1,800	2,039
	Financing:			
11.0001	Offsetting Collections from: Federal funds	-61	0	0
25.0001	Unobligated balance lapsing	15	0	0
40.0001	Appropriation	1,800	1,800	2,039
	Relation of obligations to outlays:			
71.0001	Obligations incurred, net	1,785	1,800	2,039
72.4001	Obligated balance, start of year	717	723	178
74.4001	Obligated balance, end of year	-723	-178	-202
77.0001	Adjustments in expired accounts	-22	0	0
90.0001	Outlays	1,757	2,345	2,015

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
CONSTRUCTION MANAGEMENT

Object Classification (in thousands of dollars)

Identification code 14-0103-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Direct obligations:			
	Personnel compensation:			
111.101	Full-time permanent	741	816	904
111.301	Other than full-time permanent	27	44	44
111.501	Other personnel compensation	13	10	10
111.901	Total personnel compensation	781	870	958
112.101	Personnel benefits: Civilian	122	130	150
121.001	Travel and transportation of persons	89	100	126
123.101	Rental payments to GSA	147	140	177
123.301	Communications, utilities, and miscellaneous charges	23	25	28
124.001	Printing and reproduction	12	12	12
125.001	Other services	570	488	544
126.001	Supplies and materials	13	14	14
131.001	Equipment	27	21	30
199.001	Subtotal, direct obligations	1,785	1,800	2,039
299.001	Reimbursable obligations	61	0	0
999.901	Total obligations	1,847	1,800	2,039

Personnel Summary

	1989 Actual	1990 Estimate	1991 Estimate
Direct:			
Total number of full-time permanent positions	18	18	20
Total compensable workyears: Full-time equivalent employment	16	18	20
Reimbursable program:			
Total compensable workyears: Full-time equivalent employment	1	0	0
Average ES salary	$76,750	$81,400	$83,537
Average GS/GM grade	12.4	12.4	12.4
Average GS/GM salary	$44,574	$46,624	$47,848

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
SALARIES AND EXPENSES (SPECIAL FOREIGN CURRENCY PROGRAM)

Appropriation Summary Statement
(Program and Performance)

The Department's Special Foreign Currency Program is authorized under 7 U.S.C. 1704 and 31 U.S.C. 1306. Under this program, the Department provides leadership and support in the conduct of selected research projects carried out by foreign nations. Payments are made in foreign currencies which the Treasury determines to be excess to normal requirements of the United States. Research performed by foreign countries and financed through this account is in support of the Department's domestic endangered species and mining reclamation programs.

Unobligated balances carried over from prior years have been allocated to the Fish and Wildlife Service, National Park Service and Office of Surface Mining Reclamation and Enforcement. Utilization of these unobligated balances is contingent on appropriate action by the host country.

No funds are requested for this program in 1991. Amounts reflected represent a cessation of activity in this program.

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
SALARIES AND EXPENSES
(Special Foreign Currency Program)

Program and Financing (in thousands of dollars)

Identification code 14-0105-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Program by activities:			
	Direct program:			
00.0101	Endangered species	8	0	0
10.0001	Total obligations (o/c 25.0)	8	0	0
	Financing:			
17.0001	Recovery of prior year obligations	-21	0	0
21.4001	Unobligated balance available, start of year	(226)	(240)	(240)
24.4001	Unobligated balance available, end of year	240	240	240
40.0001	Budget authority (appropriation)	0	0	0
	Relation of obligations to outlays:			
71.0001	Obligations incurred, net	8	0	0
72.4001	Obligated balance, start of year	2,495	2,161	2,161
74.4001	Obligated balance, end of year	(2,161)	(2,161)	(2,161)
78.0001	Adjustments in unexpired accounts	-21		
90.0001	Outlays	321	0	0

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
OIL SPILL EMERGENCY FUND

Appropriation Summary Statement
(Program and Performance)

Funds under this account are available for the Department of the Interior for contingency planning, response and natural resource damage assessment activities related to the discharge of oil from the tanker Exxon Valdez into Prince William Sound, Alaska. Funds are also available under this account for contingency planning, response, and natural resource damage assessment activities related to any discharge of oil in waters of the United States upon a determination by the Secretary of the Interior that such funds are necessary for the protection or restoration of natural resources under his jurisdiction.

No funds are requested for this program in 1991.

Appropriation Language Sheet

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

OIL SPILL EMERGENCY FUND

[Funds made available under this head by the "Dire Emergency Supplemental Appropriations and Transfers, Urgent Supplementals, and Correcting Enrollment Errors Act of 1989" shall be available up to a limit equivalent to the amount of funds appropriated by said Act for contingency planning, response, and natural resource damage assessment activities related to any discharge of oil in waters of the United States upon a determination by the Secretary of the Interior that such funds are necessary for the protection or restoration of natural resources under his jurisdiction. (103STAT.718)]

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
OIL SPILL EMERGENCY FUND

Program and Financing (in thousands of dollars)

Identification code 14-0119-0-1-306		1989 Actual	1990 Estimate	1991 Estimate
	Program by activities:			
10.0001	Total obligations	0	0	0
	Financing:			
21.4001	Unobligated balance available, start of year	0	(1,023)	(1,023)
24.4001	Unobligated balance available, end of year	1,023	1,023	1,023
39.0001	Budget authority	1,023	0	0
	Budget authority:			
40.0001	Appropriation	7,300	0	0
41.0001	Transferred to other accounts	(6,277)	0	0
43.0001	Appropriation (adjusted)	1,023	0	0
	Relation of obligations to outlays:			
71.0001	Obligations incurred, net	0	0	0
90.0001	Outlays	0	0	0

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
DETAIL OF PERMANENT EMPLOYMENT

Consolidated schedule of permanent employment, Office of the Secretary

	1989 Actual	1990 Estimate	1991 Estimate
Executive Level I............	1	1	1
Executive Level III...........	1	1	1
Executive Level IV............	5	6	6
Subtotal..................	7	8	8
ES-6........................	10	9	10
ES-5........................	8	12	12
ES-4........................	10	12	12
ES-3........................	5	6	5
ES-2........................	4	3	5
ES-1........................	5	13	12
Subtotal..................	42	55	56
GS-18........................	1	1	1
GS-17........................	2	2	2
GS-16........................	8	8	8
GS/GM-15......................	89	92	95
GS/GM-14......................	122	126	132
GS/GM-13......................	73	80	92
GS/GM-12......................	91	99	108
GS-11........................	44	46	48
GS-10........................	12	12	13
GS-9.........................	58	65	73
GS-8.........................	12	12	12
GS-7.........................	74	85	90
GS-6.........................	42	40	40
GS-5.........................	35	35	36
GS-4.........................	32	34	34
GS-3.........................	15	17	17
GS-2.........................	2	3	3
Subtotal..................	712	757	804
Ungraded..................	25	25	25
Total permanent employment, end of year................	786	845	893

DEPARTMENT OF THE INTERIOR

FY 1991 Budget for Consulting Services

Bureau: Office of the Secretary

Appropriation Account Title Type of Consulting Arrangement Program Requiring Services	FY 1991 Request (000's)	Description of Services
Office of the Secretary (14-0102-0-1-306)		
Program Analysis	$ 20	This amount represents the estimated cost of potential contracts to study various critical or sensitive matters that need to be addressed at the Secretarial level.
Acquisition and Property Management	224	Consulting services are required for the system analysis and system design of the proposed Departmentwide automated procurement system. In-house technical expertise required to perform system analysis and system design within the necessary timeframe is not readily available.
Management Improvement	100	The requested services will assist the Department in developing procedures, implementation plans, and long range strategies for Total Quality Management (TQM). This expertise is not available within the Department as TQM is a relatively new concept existing mainly in the private sector.
Total	$ 344	

RESEARCH AND DEVELOPMENT ACTIVITIES

DEPARTMENT OF THE INTERIOR
Office Of The Secretary

(in millions of dollars)

	line code		1989 Actual	1990 Estimate	1991 Estimate
Conduct of R & D by activity					
Basic Research	101	B.A.	0.0	0.0	0.0
		Oblig.	0.0	0.0	0.0
		Outlays	0.0	0.0	0.0
Applied Research	102	B.A.	0.0	0.0	0.0
		Oblig.	0.0	0.0	0.0
		Outlays	0.0	0.0	0.0
Development	103	B.A.	0.4	0.5	0.7
		Oblig.	0.4	0.5	0.7
		Outlays	0.4	0.5	0.7
Total Conduct of R & D	199	B.A.	0.4	0.5	0.7
		Oblig.	0.4	0.5	0.7
		Outlays	0.4	0.5	0.7
Conduct of R & D Performed by Colleges and Universities	201	B.A.			
		Oblig.			
		Outlays			
R & D Facilities	201	B.A.			
		Oblig.			
		Outlays			

Prepared:	23-Jan-90
Contact:	Debra J. Bloom 343-6441

OFFICE OF THE SECRETARY
Salaries and Expenses (Special Foreign Currency Program)
Summary of requirements
(Dollar Amounts in Thousands)

Appropriation: Salaries and Expenses(SFCP)

Summary of base adjustments:	FTE-T	Amount
FY 1990 Appropriation\FY 1991 Estimate......................................		0

Comparison by activity/ subactivity:	FY 1989 Actual FTE-T	FY 1989 Actual Amount	FY 1990 Enacted to Date FTE-T	FY 1990 Enacted to Date Amount	FY 1991 Base FTE-T	FY 1991 Base Amount	FY 1991 Estimate FTE-T	FY 1991 Estimate Amount	FY 1991 Inc./(dec.) from FY 1990 Estimate FTE-T	FY 1991 Inc./(dec.) from FY 1990 Estimate Amount	FY 1991 Inc./(dec.) from FY 1991 Base FTE-T	FY 1991 Inc./(dec.) from FY 1991 Base Amount
Endangered species ....B A...		0		0		0		0		0		0
Endangered species ....[Oblig.]		8		0		0		0		0		0
Salaries and expenses(SFCP),												
Total Requirements..........B A...		0		0		0		0		0		0
Total Requirements........[Oblig]		8		0		0		0		0		0

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY

ADMINISTRATIVE PROVISIONS

There is hereby authorized for acquisition from available resources within the Working Capital Fund, by donation, or through excess surplus property, 11 aircraft, 7 of which shall be for replacement; (Department of the Interior and Related Appropriations Act, 1990).

Explanation of Proposed Language

31 U.S.C. 638(b) requires specific authority for the purchase of aircraft. This also applies to replacement.

31 U.S.C 638(b) provides that, "Excepting appropriations for the military and naval establishments, no appropriations shall be available for the purchase, maintenance, or operation of any aircraft unless specific authority for the purchase, maintenance, or operation thereof has been or is provided in such appropriations."

As part of the budget process, each year, the Office of Aircraft Services reviews records and estimates how many aircraft will need to be replaced or new additional aircraft purchased in a given year. This estimate provides for general replacement of aircraft and some contingency in case of destruction of aircraft. A 30 day advance notice will be given to the Committees on Appropriations for any additional aircraft to be acquired.

If the estimated number of aircraft requested in the budget is determined to be insufficient to meet program requirements in a given year, i.e., the need to replace an aircraft due to a crash; the Department will seek additional legislative authority as required by law.

Utilization of proceeds derived from the sale of replaced aircraft to partially offset the purchase price of the replacement aircraft is a cost conscious and economical approach to the perpetuation of fleet operations which are financially managed through the Working Capital Fund. This same provision is contained in the Administrative Provision language for the Forest Service, Department of Agriculture.

Authority is proposed for the acceptance and operation of donated aircraft that may become available through court-ordered action following aircraft seizure, forfeiture, or abandonment procedures in the course of conducting law enforcement investigations or that may become available for other reasons. Donated aircraft are included in the number authorized for acquisition. This authority would permit the thorough examination and performance of any necessary maintenance or repairs prior to operation of the aircraft. Aircraft acquired as a donation will be subject to the same rules and regulations of any DOI aircraft (i.e. A-76).

Appropriation Language Citations
Appropriation: Administrative Provisions

Appropriation language and citations:

1. There is hereby authorized for acquisition, from available resources within the Working Capital Fund, ______ aircraft, ______ of which shall be for replacement:

   31 U.S.C. 638(b)

   31 U.S.C. 638(b) provides that, "Excepting appropriations for the military and naval establishments, no appropriations shall be available for the purchase, maintenance, or operation of any aircraft unless specific authority for the purchase, maintenance, or operation thereof has been or is provided in such appropriations."

ALLOCATIONS RECEIVED FROM OTHER ACCOUNTS

Note.-Obligations incurred under allocations from other accounts are included in the schedules of the parent appropriations as follows:

Labor, Employment and Training Administration, "Training and employment services."

Metric Activities at the Department of the Interior

This report is submitted to the Congress in compliance with the requirements of Section 12.(a) of The Metric Conversion Act, Public Law 94-168, as amended.

Introduction

The predominant uses of the metric system of measurement in the Department of the Interior have been for scientific reports and maps produced by many of the Department's bureaus. The metric system has also been used in the design and construction of a few major construction projects where dual dimensioning, metric and English, was used. Bureaus have found that small construction firms are often not prepared to use the metric system. Large construction companies are usually capable of using metric units, especially companies that operate internationally. Bureaus have found that State and local governments usually prefer to use the English system.

Metric Conversion Activities in FY 1990

During FY 1990 the following metric conversion activities are being performed by the Department of the Interior:

1. Current Departmental metric policies are being reviewed to identify revisions that are necessary to comply with the requirements of the 1988 Amendments to the Metric Conversion Act.

2. Interior is actively participating in meetings of the Department of Commerce's Metrication Operating Committee (MOC) and has provided suggestions and comments to the MOC.

3. Plans and policies of other agencies are being reviewed to benefit from their progress on metric conversion.

4. Bureaus will be surveyed as to their interest in participating in the activities of the MOC subcommittees.

5. A policy memorandum will instruct procurement officials to modify their procurement regulations to comply with the 1988 Amendments and to ensure that procurements include the metric requirements, except when impractical or inefficient.

6. A Departmental metric conversion program will be developed to fulfill the requirements of the 1988 Amendments.

7. Bureau metric coordinators will be named to coordinate implementation of the metric conversion program.

Metric Conversion Plans for FY 1991

During FY 1991 the following metric conversion activities will be performed by the Department of the Interior:

1. The Department will work with bureaus to continue to implement the metric conversion program.

2. Revised Departmental policy on the use of the metric system will be published.

3. Individual metric conversion plans will be required of each bureau.

4. The Department will continue to participate actively in MOC meetings.

Metric Policies and Activities of Some Interior Bureaus

Geological Survey

All intermediate scale maps (i.e., 1:50,000, 1:100,000, and 1:250,000 scales) are produced in metric units. The commonly used 7.5 minute maps are usually produced in English units because these units are preferred by the States and other users of these maps. When the bureau's modernization of its map production processes is complete, all digitized maps will be available in metric units when requested. It is Geological Survey policy to use metric units in its scientific publications.

Bureau of Reclamation

Dual dimensioning was used in the design and construction of two major construction projects of the bureau: the Choke Canyon Dam in Texas was completed in 1982 and the Yuma Desalting Plant in Arizona will be operational in 1991 or 1992.

Bureau of Mines

The bureau produces periodic reports on the production, consumption and trade of commercially important minerals and materials. Metric transition efforts to date have resulted in the publication of data in metric units in reports on 43 commodities. An additional 24 commodities have been identified for conversion to metric units for publications in 1990. The remaining 34 commodities are under study to determine the feasibility of publication in metric units by the end of 1991.

Minerals Management Service

The mapping activities in the Alaska, Atlantic and Pacific regions of the Offshore Minerals Management Program produce maps in metric units. The bureau is currently assessing the impact of metric conversion on other activities.

Fish and Wildlife Service

Metric units are used in scientific and biological projects in the National Wildlife Refuges. All refuge maps include metric scales. Data in reports on the States' use of Federal aid administered by the bureau are in metric units, and States are encouraged to express data in grant proposals in metric. References to volume, area, weight, and distance will be expressed in metric in the bureau's revised Federal Aid Manual.

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WORKING CAPITAL FUND

Appropriation Summary Statement
(Program and Performance)

This fund finances central reproduction, communications, supplies, health services, aircraft and other such services which may be performed more advantageously on a reimbursable basis (43 U.S.C. 1467). The capital consists of $300 thousand appropriated, and donated assets of $169 thousand.

WORKING CAPITAL FUND NARRATIVE STATEMENT

The Working Capital Fund was established pursuant to 43 U.S.C. 1467, to provide required central services efficiently and economically at cost.

Organizations receiving services from the Working Capital Fund are billed their share of the costs to the Fund based on the level of services rendered.

The following statements are included to provide additional information on the Fund:

Statement of Obligations and Workyears (FTEs) Estimates by Function
Statement of Revenue by Organization and Function
Report on Financial Position as of September 30, 1989
Report on Obligations for the period ending September 30, 1989

A brief description of the functions funded through the Fund follows:

I. DIRECT BILLING ACTIVITIES - Costs incurred by these activities are recovered by directly billing the users based on the level of service provided in support of orders received. Activities funded by direct billings and the performing office are described below by function.

Departmental Honor Awards and Medals (Office of Personnel)

This activity provides a central account for the purchase of gold and silver Departmental Honor Awards medals and lapel emblems. The bureaus and offices are charged for the cost of the medals and emblems awarded to Departmental employees to recognize meritorious and distinguished achievements.

ITC Contracted Training (Office of Information Resources Management)

The Information Technology Center conducts formal training in its classroom in microcomputer technology for Departmental personnel. Beginning in FY 1989, contracted services for training were established to supplement training conducted by the Center. By having the contractor perform training, the staff is able to: provide more technical assistance to individual users, provide basic assistance in local area networks, conduct advanced level courses for the Train-the-Trainer program and expand their own knowledge in new technology products.

Departmental Printing Plant and Copy Centers (Office of Administrative Services)

This activity provides a full range of duplicating, specialized binding and finishing, addressing, mailing and distribution services for all organizations in the Washington, D.C. area and Departmental field offices requesting service. Services include: operating six self-service copy centers in the Main Interior Building; processing work orders for in-plant printing services; and operating a computerized addressing and mailing system. A specific objective will be to continue to automate and modernize print plant equipment in order to achieve a more efficient and economical operation.

Services provided include a full range of electronic publishing, disk conversion, and color copying for all Departmental organizations in the Washington, D.C. area. Charges are based on the time and/or materials required to provide these services.

The activity provides contract printing services from the Government Printing Office, contractors and minority printing contractors for all activities in the Washington, D.C. area and Departmental field offices requesting service. Charges are based directly on the individual cost of printing services provided to the user. Also, the activity provides indexing services for appropriation subcommittee hearings for all Departmental bureaus and offices. Mailings consist of press releases, vacancy announcements, pamphlets, etc.

This activity provides for centralized ordering and issuance of Office of the Secretary letterhead, envelopes and mailing labels, in addition to centralized ordering and issuance of embossed Secretarial stationery, note paper, and envelopes, and stationery and envelopes for the Under Secretary. Price reductions are achieved through centralized large quantity purchases. Items are issued to all elements of the Department on a reimbursable basis, based upon the cost incurred in procuring requested items.

Postage (Office of Administrative Services)

This activity funds U.S. Postal Service (USPS) postage costs incurred by the Office of the Secretary and selected other Departmental organizations nationwide, and mail dispatched at the Departmental Headquarters

Consolidated Mailroom and the Departmental Printing Plant for the Office of the Secretary, selected bureaus and offices, and other Interior organizations utilizing the facility. The activity also provides for overseas delivery and postal services performed by the Department of Defense (DOD) for Department of the Interior organizations. Centralization of the postage accounting process allows for immediate processing of USPS and DOD billing statements.

Miscellaneous and Legislative Printing (Office of Administrative Services)

This activity provides for the cost of all miscellaneous and legislative printed materials which are ordered by the bureaus and offices of the Department. These printed materials include House and Senate Reports, Laws, etc., and various publications from other agencies (e.g., Office of Personnel Management, General Services Administration, etc.).

Patent Fees (Office of Administrative Services)

This activity provides a deposit account with the Patent and Trademark Office, Department of Commerce, to pay patent filing and coupon fees. This service is available to all Department of the Interior bureaus and offices.

Consolidated Procurement - Space and Facilities Management (Office of Administrative Services)

This activity funds miscellaneous administrative services which are obtained through service contracts with the General Services Administration (GSA) and private companies which are on the GSA schedules. Specific services provided include, but are not limited to, fabrication and purchase of door name plates (signs identifying occupants) and miscellaneous signs and telecommunications related services (credit cards, maintenance, etc.).

Consolidated Procurement - General Services (Office of Administrative Services)

This activity provides a central facility for the ordering of office supplies and equipment, contract labor services, courier services, office machine repair, laundry services, carpeting and carpet underlay, picture framing services, and miscellaneous other goods and services from local vendors for the organizations serviced. Goods and services ordered are available within a very short time period through the use of centralized Blanket Purchase Agreements (BPAs). This service is available to all elements of the Department, upon request.

This activity provides a central point for charging costs associated with BPAs and eliminates the requirement of processing individual orders for each purchase initiated and/or organization served. Increases in this activity have reduced procurement lead time for many common supplies and services as well as processing costs and provides quality items at low prices through quantity purchases. Charges to requesting bureaus and offices are based upon exact invoice billings.

Consolidated Telecommunications (Office of Administrative Services)

This activity funds miscellaneous services which are obtained through existing contracts, the General Services Administration, in-house resources or other contract sources.

Specific services include telecommunications related services in excess of the standard level of service requested by bureaus and offices.

Consolidated Maintenance and Alterations (Office of Administrative Services)

This activity funds miscellaneous services which are obtained through existing contracts, the General Services Administration, in-house resources or other contract sources.

Specific services include building services (operations and maintenance) in excess of the standard level of service and space alterations (painting, wiring, partitions, etc.) requested by bureaus and offices.

Inventory Distribution (Office of Administrative Services)

This activity provides for a centralized ordering and issuance of selected controlled supply items where procurement lead time or other logistics associated with such items requires maintenance of inventory stock to meet the needs of the Department. Cost savings are achieved through centralized large quantity purchases, and timely availability of required items.

Items are issued to all elements of the Department on a reimbursable basis, based upon the cost incurred by the Department in procuring the requested items.

Aircraft Services (Office of Aircraft Services)

The Office of Aircraft Services (OAS) was established to improve aviation safety and aviation cost effectiveness and, as such, has Departmentwide responsibility and authority for all Departmental in-house aircraft; establish standards for all DOI aircraft facilities and aviation related personnel; assign aircraft to bureaus and offices as required; procure aircraft services through contracts and rental agreements in support of bureaus and offices; purchase aircraft and aviation maintenance; assist bureaus in determining whether aircraft should be government-owned, leased, contracted or chartered; and coordinate aircraft use in such a manner as to obtain the best use of existing equipment, consistent with various mission requirements.

The Department of the Interior utilizes approximately 87 owned or in-house operated aircraft, just under 300 annually contracted or leased aircraft, as well as approximately 3,000 rental aircraft in providing the needed aviation services to the using DOI bureaus and offices. Services are provided throughout the United States including Alaska and Hawaii.

The gross costs of the aviation services provided by OAS have been steadily increasing over the years. The bureaus that use aircraft are continually increasing their requests for services, (more aircraft and more use). Also, the cost of each individual aircraft is on a modest upward trend. These two factors have caused the OAS dollar volume of business to increase.

II. CENTRALIZED ADMINISTRATIVE SERVICES - The costs incurred by these activities are billed to users based on workload indicators compiled by the performing office. These indicators include historical data on usage, number of personnel serviced, number of transactions processed, or other quantitative data available that has been updated for anticipated current year activities. Activities funded by Centralized Administrative Services and the performing office are described below by function.

Departmental News and Information Center (Office of Public Affairs)

The Departmental Broadcast and Electronic Communications Center (DBECC) provides numerous services for the various bureaus and offices in the Department. Services include technical assistance and development support for audio and video productions; editing, duplication (including video conversions of standard sound synchronized slide programs and conversion of 3/4" video programming to VHS and Beta formats), and distribution of radio and television news actualities; public service announcements, presentations, internal messages to employees, editorial replies, and providing production facilities for video programming requiring limited special effects; and assisting marketing personnel (e.g. USGS topographical map sales) in development of promotional material. Production time is scheduled as needed.

This account also supports oversight, indexing and monitoring of all audiovisual productions and publications produced by the various bureaus. Office of Public Affairs control of these items is mandated by the Office of Management and Budget.

News releases are electronically transmitted to the National Press Club and news bureaus. The DBECC also monitors all major television network news and public affairs programs, which eliminates duplication of this function by each bureau. Electronic access to news wires is available.

Departmental operation of this facility eliminates the need for the bureaus to purchase and operate equipment for similar services. Further, it supports the Office of Management and Budget mandate for reduced audiovisual production centers. The DBECC will also enable a greater degree on automation of public affairs activities throughout the Department.

OS Secretarial Budget Operations (Office of Budget)

This activity provides a full range of budget services within the Office of the Secretary including:

Development of budget estimates for the Office of the Secretary, and several independent commissions and offices, and the justifications of these estimates to the Office of Management and Budget and to Congress; and

Establishment of funding levels, resources and the allocation of FTEs to various Departmental offices funded by the O/S appropriation or the Working Capital Fund and the effective execution of these budgets.

Alaska Lands Act Data Base - ALLEX (Library Services)

The Alaska Lands Act Data Base is a Departmentally owned computerized information system containing the legislative history of the Alaska National Interest Lands Conservation Act (ANILCA), P.L. 96-487. This system enables a user to research all relevant documents in a cost effective manner, and to focus on the legislative intent of Congress. This data base is fully indexed by the section of the final legislation to permit the user to track a particular section of ANILCA through its development. Such a system increases the productivity of Departmental employees doing research into the background of this legislation which is so central to the Department's mission. Also, the system includes telecommunication capability which permits field personnel, who are responsible for administering the legislation, to easily access the full text of these documents. This is especially important in isolated locations in Alaska where the data base has great relevancy.

Medical and Health Services (Office of Personnel)

The Division of Medical and Health Services is responsible for the Departmentwide employee health program, the Employee Medical File System, the Drug Testing Program, the Employee Assistance Program, the special Department Fitness for Duty Examination Panel, and the occupational health service program for employees. The Division provides medical coverage for law enforcement personnel, rangers, firefighters, laboratory workers, and those who work in hazardous or toxic waste sites. The Chief of the Division issues medical standing orders to emergency technicians, paramedics, and nurses in the National Park Service, Bureau of Land Management, and Fish and Wildlife Service. The Chief of the Division provides expert medical advice on medical and environmental health matters to bureaus and field offices and other Department officials on matters pertaining to medical policies, procedures, and health records.

The Division is responsible for reviewing and evaluating pre-employment and in-service medical examinations, and for providing medical advice and guidance to field offices. In addition, the Division provides health education and counseling services and administers special preventive health examinations and immunizations. The Division is also responsible for coordinating the Department's blood donor efforts in conjunction with the American Red Cross. The Chief of the Division is responsible for providing medical direction to the Departmentwide Emergency Medical Service and administering the Departmentwide Medical Surveillance Program, as well as providing medical direction to the Department's Emergency Medical Technician certification and registration program.

Departmental Human Resources Development Center (Office of Personnel)

This activity provides services to bureaus and offices throughout the Department through a variety of training and development programs. These programs include the Departmental Manager Development Program, executive development programs, and labor-relations training. This activity provides all Departmental policy and program guidance in training and career development areas, including supervisory training, upward mobility, and special emphasis programs such as productivity improvement; operates the Departmental Learning Center, Denver Learning Center, and the Albuquerque/Sante Fe Learning Center, which emphasize training to improve job performance; manages all Departmental career development programs; provides access to career planning services through the Departmental Career Resources Center which is designed to assist employees affected by reduction-in-force and other organizational and program changes; and provides subject matter input and guidance for the training sub-system to PAY/PERS.

The Center provides guidance to bureaus and offices in the establishment of Computer-Based Training (CBT) programs and other alternatives to classroom training, and offers CBT courses and Learning Lab courses. The learning centers, and other programs in this activity provide training and development opportunities to approximately 6,000 employees per year.

Information Technology Center (Office of Information Resources Management)

This activity provides a comprehensive source of assistance and training for Departmental personnel in the evaluation and application of small computer technology. The main objective of the DOI Information Technology Center (ITC) is to promote the self-sufficiency of Interior employees in the use of microcomputers and related technology.

The services provided by the ITC include: individual consultation on configuration of planned microcomputer systems and development of applications; "hands-on" instruction on a one-on-one and group basis (classes and seminars) on microcomputers and terminals; technical assistance on hardware and software; demonstration and evaluation of new equipment, software and other peripherals; access to clearinghouse information on software, hardware, and other peripherals and to the technical library; and publication of a newsletter primarily reporting how small computer technology is being used in the Department.

The demand for service and assistance from the DOI Information Technology Center has continued to increase as the number of microcomputers in the Department increases. The Department plans to purchase more systems over the next three years, and the demand for service is expected to increase proportionally. During FY 1989, approximately 5,500 Interior employees were assisted individually or received training on the use of small computer technology. Although training continues to place a heavy demand on personnel resources, the focus of ITC support is shifting more to providing support for employees who have received introductory instruction and need assistance using advanced features. In addition, new technologies to further increase personal productivity are being evaluated.

Printing and Publications (Office of Administrative Services)

The Division of Printing and Publications serves as the central printing and publication management organization for policy guidance, oversight, and assistance to Departmentwide activities in the operation of their printing, publishing, and related programs, and in the acquisition and use of reprographic equipment in support of the Departmentwide Reprographic Management Program. The Division acts as the Department's representative in all printing and related areas with other Federal activities, the Joint Committee on Printing, the Government Printing Office (GPO), and the private commercial sector. The Division surveys bureaus and offices to determine the need for large quantities of publications ordered and monitors on a continuing basis ordering practices in an effort to reduce costs related to ordering excessive quantities of publications; and revises Departmental guidelines on printing and publications to reflect changes in GPO procedures.

The Division also provides photographic services to the Office of the Secretary, bureaus, and offices upon request. Numerous graphics services are provided for the Office of the Secretary and for bureaus and offices on a limited, as time allows, basis.

Enforcement and Security Management (Office of Security and Drug Enforcement)

This activity coordinates and provides services in support of Departmentwide security and intelligence programs, the governmentwide National Law Enforcement Telecommunications System, and State Department liaison programs. Services include: guard/receptionist/access controls/information assistance; protection for special events and potential and actual disturbances; employee, retiree and contractor identification cards; key and lockwork; analyzing options and implementing policy and related directives whereby cost reduction for security and law enforcement protection services can be realized; coordination and issuance of domestic criminal justice information; collection, analysis and distribution of international terrorism activities against U.S. personnel, travelers, facilities, operations, and interests; and accountability, processing, handling, and storage of classified message traffic received from the State Department.

Safety Management (Director of Management Services)

This activity provides a separate function for management of Interior's policy, programs and regulations related to the safety and occupational health of employees, safety of contractor workforces, and public visitor safety and allows for a more effective and coordinated effort in the Department. Staff members, through a Safety Management Evaluation process, measure the effort and effectiveness of bureau managers in implementation of and compliance with pertinent safety and occupational health criteria.

Responsibilities include: developing, disseminating and interpreting Department policy, programs and regulations related to employee, contractor and visitor safety; conducting Annual Safety Management Evaluations of bureaus, offices and Field Operating Agencies (FOA) under the Department; maintaining the Department's Safety Management Information System on accident reporting and conducting analyses and report preparation for the Department and other Federal agencies; representing the Secretary on national, regional and local agencies on safety and occupational health matters; and providing managerial, administrative and technical assistance to FOA Safety and Occupational Health Offices.

WCF Direction (Office of Administrative Services)

This activity provides overall direction and guidance to the Office of Administrative Services, which is funded primarily by the Working Capital Fund (WCF). This activity implements policies and directives for the WCF and provides general guidance and oversees program activities of the Divisions of Space and Facilities Management, Information and Library Services, General Services, Printing and Publications, and Fiscal Services, including several WCF activities administered by those divisions.

Fiscal Services (Office of Administrative Services)

This activity provides the full range of fiscal support services including:

Establishment of fund control and financial management reporting for effective execution of budgets, accounting, and disbursements of all funds available to various Departmental offices, independent commissions, and other activities under the cognizance of the Office of the Secretary;

Continued implementation of measures associated with the consolidation of various administrative functions throughout the Department in order to provide the highest quality service as economically as possible;

Provision of a full range of administrative services relative to fiscal matters for the Office of the Secretary and other Departmental offices' program managers, including travel, administrative control of funds, imprest operations, and financial management of direct and reimbursable budgetary resources;

Provision of assistance to program managers in integrating automated administrative systems with the budget and accounting data base, including PAY/PERS, and assistance in documenting management improvement accomplishments; and

Provision of Departmental coordination and administration of the building delegation program, including all direct finance-related communication with GSA, consolidation of all external financial reports to GSA, receipt of all funding from GSA and distribution of appropriate funds to the participating bureaus, and general financial oversight of the program within the Department.

The 1991 estimate reflects the amount needed to maintain these systems and activities at a sufficient operating level.

General Services (Office of Administrative Services)

This activity provides for administrative, management, and a variety of support services to elements of the Department. Services and serviced areas vary in scope by the type of activity involved. The Division establishes policy directives and guidelines of Departmentwide impact for certain general services, participates in studies and reviews of general service functions within the Department, issues instructional and informational material pertaining to general services, and initiates program modifications and improvements as necessary to meet the changing needs of the Department.

The Division maintains operational liaison with the U.S. Postal Service and the General Services Administration in connection with mail management activities at headquarters, operation of travel services programs, and other functional areas.

Specific services provided include, but are not limited to: parking, procurement and contracting, property management and accountability, shipping and receiving, mail, records, and safety management within the DOI complex; Secretarial files maintenance; Departmental Museum management and maintenance; motor vehicle management; office relocation services; oversight of contract travel services; transportation of household goods; coordination of contract labor services; control and maintenance of official passports and visas; centralized purchasing of certain office supplies, equipment, and associated services (i.e., repairs, etc.), and logistical support in connection with press conferences, public hearings, and official ceremonies; distribution of publications and other documents from the Government Printing Office, Congress and other agencies; warehouse management; maintenance and coordination of use of certain conference rooms and other public areas in the Interior Building; and a variety of other services. The Division provides centralized service availability and coordination of certain services among bureaus and offices to ensure adequate service levels are maintained.

The Division provides centralized mail management at Departmental headquarters through operation of a Consolidated Mailroom, which sorts and delivers incoming mail to bureaus and offices and other occupants of the Main and South Interior Buildings and selected other locations in the Washington Metropolitan Area and provides metering and dispatch services for outgoing mail.

The scope of serviced areas has increased significantly in recent years and is expected to continue to expand over the next few years with the consolidation or centralization of additional administrative services in the Washington metropolitan area at Departmental Headquarters. Examples of general services program increases include the recent extension of procurement, contracting, property, mail management, contract labor, and other services to bureaus formerly providing such services internally, in conjunction with their relocation of personnel outside the Interior Complex. Over the next few years, the division will be considering an extension of these services to other elements of the Department, establishment of a Centralized Administrative Service Unit for small purchasing/blanket purchase agreement administration, improvement of processes for in-house issuance of personal property items to reduce procurement lead time and costs through utilization of excess and rehabilitated property where possible, and expansion of availability of the Office of the Secretary fully integrated accounting, procurement, property management system for use by bureaus consistent with Departmentwide systems initiatives.

The consolidation of certain functions produces greater cost efficiency through employee specialization, volume discount purchases, and better monitoring and review of Departmental policies and procedures initiated within the Office of the Secretary. Centralized administrative service availability provides greater flexibility for bureau program modifications and results in greater efficiency in administrative and other program activities throughout the Department.

Space and Facilities Management (Office of Administrative Services)

This activity develops and administers the Departmentwide program for acquisition, assignment, and use of office space in the District of Columbia, fifty states, and territories. It serves as the sole Department liaison with the General Services Administration (GSA) concerning space requirements in the Interior Regional cities and other selected areas and provides oversight in the execution of the GSA real property management delegations program. It administers the building management function for all bureaus and offices in the Washington metropolitan area and Secretarial organizations nationwide and directly manages the operation and maintenance of the Main and South Interior Buildings. It administers the locator service for Departmental employees located in the Washington metropolitan area.

The Division is also responsible for operating and managing the Washington Interagency Telecommunications System (WITS), the GSA-provided computerized telephone system for the Interior Complex and the Department's in-house data interface/transport system. (Major acquisition and start-up costs will occur in FY 1990; costs thereafter will be reduced and related primarily to maintenance.) The Division also has responsibility for providing telecommunication policy and guidance to the Office of the Secretary nationwide and to users throughout the Department in the Washington metropolitan area. The Division coordinates all requests for telephone credit cards; provides updates to the local and GSA telephone directories for the Department; provides conference call services; and assumes responsibility for data and voice related systems and services.

Personnel Services (Division of Personnel Services)

This activity while providing a full range of personnel support services administers the personnel management program for the Secretarial offices (excluding the Office of the Inspector General), and several independent agencies; develops, implements, and evaluates personnel management policies, procedures, guides, and standards; performs personnel services and provides technical advice and assistance relating to manpower planning and utilization, personnel aspects of organization, position management and classification, work force analysis, labor relations and wage administration, recruitment and placement, employee relations and services, conduct and discipline, reduction-in-force, appeals and grievances, employee motivation and incentives, employee development, and conflict of interest and ethics counseling; provides personnel management services and advice to the Federal component of the High Court of American Samoa; develops worker information and statistics to assist management officials; prepares and maintains official personnel folders for all key officials including heads of bureaus and offices of the Department; and continues to implement measures associated with improved management effectiveness of personnel functions.

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WORKING CAPITAL FUND
Obligation and Workyear Estimates by Function
(Dollar amounts in thousands)

	1989 ACTUAL		1990 ESTIMATE		1991 ESTIMATE	
DIRECT BILLINGS	FTE	$	FTE	$	FTE	$
DEPARTMENTAL MEDALS		73		40		40
ITC CONTRACTED TRAINING		30		25		25
PRINT PLANT & COPY CENTERS	23	2,460	30	2,136	30	2,237
POSTAGE		719		900		1,089
MIS. & LEGISLATIVE PRINT		707		1,175		605
PATENT FEES		18		20		20
CONS. PROCUREMENT-SPACE		108		216		216
CONS. PROCUREMENT-GEN SVC		405		375		475
CONS. TELECOMMUNICATIONS		279		250		250
CONS. MAINT & ALTERATIONS		150		250		250
INVENTORY DISTRIBUTION		6		10		14
AIRCRAFT SERVICES	78	66,074	77	57,000	77	59,000
ST-DIRECT BILLINGS	101	71,029	107	62,397	107	64,221
CENTRALIZED ADMIN. SERVS.						
DEPT'L NEWS & INFO CENTER	1.5	130	1.5	132	1.5	165
OS BUDGET OPERATIONS	5	251	6	300	6	300
ALLEX DATA BASE		29		30		30
MEDICAL & HEALTH SERV	7	400	8	402	8	430
DEPT'L HUMAN RES. DEV. CT	7	701	12.5	913	12.5	1,049
INFORMATION TECHNOLOGY CT	5	242	6	281	6	305
PRINTING & PUBLICATION	15	499	15	676	15	709
ENFORCE. & SECURITY MGMT	4	891	6	1,000	6	1,004
SAFETY MANAGEMENT					6	547
WCF DIRECTION	3	306	4	315	4	327
FISCAL SERVICES	32	1,528	34	1,368	34	1,650
GENERAL SERVICES	64	2,595	66	2,600	66	2,681
SPACE & FACILITIES MGMT	18	1,113	21	2,857	21	1,613
PERSONNEL SERVICES	29	1,344	31	1,408	31	1,507
ST-CENT. ADMIN. SERV	190	10,029	211	12,282	217	12,317
RESERVE				225		296
TOTAL WORKING CAPITAL FUND	291	81,058	318	74,904	324	76,834

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1989 ACTUAL
(in thousands of dollars)

DIRECT BILLINGS	LAND MGMT.	RECLM.	NATL. PARK SERV.	FISH & WILDLIFE SERV.	U.S. GEOLOG. SURVEY	MINERAL MGMT. SERV.	MINES	SURFACE MINING
DEPARTMENTAL MEDALS.......	4.5	5.1	3.4	4.0	11.0	2.5	4.2	0.3
ITC CONTRACTED TRAINING...	3.2			2.5		1.4		2.1
PRINT PLANT & COPY CENTERS	313.4	75.8	273.8	245.3	42.6	108.1	36.1	116.3
POSTAGE..................	125.2	39.2	42.7	34.3	11.2	20.1	1.1	6.6
MIS. & LEGISLATIVE PRINT..	46.8	69.7	85.2	42.1	44.2	9.3	20.5	8.3
PATENT FEES...............		3.0			4.1		10.6	
CONS'L PROCUREMENT-SPACE..	2.0	8.5	0.4	1.6	0.3	4.2	0.2	1.3
CONS'L PROCUREMENT-GEN SVS	1.3	2.8	1.1	4.5	0.3	8.9	0.9	
CONS'L TELECOMMUNICATIONS.	0.3		0.4	0.2		0.7		0.2
CONS'L MAINT & ALTERATNS..	33.4	62.8	17.1	7.8		28.1		2.7
INVENTORY DISTRIBUTION....	0.4	1.8	2.2	4.7	0.2	0.1	1.2	0.1
AIRCRAFT SERVICES.........	27,110.0	921.0	10,261.0	5,196.0	1,049.0	5,258.0	366.0	392.0
ST-DIRECT BILLINGS........	27,640.5	1,189.7	10,687.3	5,543.0	1,162.9	5,441.4	440.8	529.9
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	12.5	5.0	16.2	3.7	5.0	45.0	0.3	2.5
OS BUDGET OPERATIONS......	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
ALLEX DATA BASE...........	6.9		3.9	5.1	3.3	3.9	0.3	0.3
MEDICAL & HEALTH SERV.....	36.3	22.4	56.6	40.9	19.0	7.4	106.0	14.5
DEPT'L HUMAN RES. DEV. CT.	94.7	76.6	108.9	58.5	115.6	41.4	35.0	14.2
INFORMATION TECHNOLOGY CT.	19.6	14.7	34.4	14.7	2.5	24.5	29.5	27.0
PRINTING & PUBLICATION....	35.4	13.3	64.7	34.0	47.4	15.1	20.1	20.1
ENFORCE. & SECURITY MGMT..	91.7	84.8	72.9	64.6	5.7	32.7	4.3	53.5
WCF DIRECTION.............	20.8	13.5	30.4	20.0	6.4	10.7	3.8	16.7
FISCAL SERVICES...........	16.4	37.5	17.2	16.9	16.7	16.7	14.5	15.5
GENERAL SERVICES..........	158.6	61.2	120.1	138.8	61.7	61.5	46.2	55.5
SPACE & FACILITIES MGMT...	54.0	54.8	173.4	81.5	13.4	30.9	14.3	94.1
PERSONNEL SERVICES........	2.6	2.1	1.2	1.2	0.9	1.1	0.8	0.5
ST-CENT. ADMIN. SERV......	556.9	393.3	707.3	487.3	305	298.3	282.5	321.8
RESERVE..................								
TOTAL WORKING CAPITAL FUND	28,197.4	1,583.0	11,394.6	6,030.3	1,467.9	5,739.7	723.3	851.7

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1989 ACTUAL
(in thousands of dollars)

DIRECT BILLINGS	INDIAN AFFAIRS	TERR.	OFFICE OF THE SECRETARY	YOUTH PROGRAMS	INSPECTOR GENERAL	SOLICITOR	ALASKA LAND USE COUNCIL	CONSTR. MGMT.
DEPARTMENTAL MEDALS.......	1.4		7.3		0.3			
ITC CONTRACTED TRAINING...	2.8	0.1	7.0		1.3	3.3		0.1
PRINT PLANT & COPY CENTERS	244.6	3.5	776.2		67.1	108.7		7.9
POSTAGE..................	194.2	2.0	271.9		23.3	17.2		0.1
MIS. & LEGISLATIVE PRINT..	39.6		98.3		3.8			
PATENT FEES..............								
CONS'L PROCUREMENT-SPACE..	1.1		28.4					
CONS'L PROCUREMENT-GEN SVS	0.9	25.7	90.4		43.6	38.6		5.2
CONS'L TELECOMMUNICATIONS.	0.3		0.4			1.5		
CONS'L MAINT & ALTERATNS..	14.0		156.4					
INVENTORY DISTRIBUTION....	0.6		4.2					
AIRCRAFT SERVICES.........	3,445.0		268.0					
ST-DIRECT BILLINGS........	3,944.5	31.3	1,708.5	0.0	139.4	169.3	0.0	13.3
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	5.0	0.6	17.9	0.1	0.5	0.9		
OS BUDGET OPERATIONS......	7.4	4.7	142.1	1.5	4.2	4.7	0.5	0.5
ALLEX DATA BASE...........	5.7		0.3			0.3		
MEDICAL & HEALTH SERV.....	37.3	0.1	51.0	0.6	5.8	8.4		
DEPT'L HUMAN RES. DEV. CT.	95.3		27.7	0.5	4.2	5.2		
INFORMATION TECHNOLOGY CT.	34.4		33.0	0.8	6.3	2.4		
PRINTING & PUBLICATION....	28.6	1.0	180.6	3.3	14.6	16.1		
ENFORCE. & SECURITY MGMT..	91.5	26.6	296.7	6.1	16.1	44.5		
WCF DIRECTION.............	22.1	7.8	112.5	6.7	12.1	19.1	0.2	
FISCAL SERVICES...........	22.4	145.6	607.8	23.0	158.7	242.3	8.1	23.8
GENERAL SERVICES..........	199.9	71.0	1,362.1	5.1	100.3	114.7		12.5
SPACE & FACILITIES MGMT...	70.2	19.7	293.8	2.9	23.4	39.9		9.6
PERSONNEL SERVICES........	6.6	26.2	1,048.2	5.5	4.0	116.9	1.3	29.4
ST-CENT. ADMIN. SERV......	626.4	303.3	4,173.7	56.1	350.2	615.4	10.1	75.8
RESERVE..................								
TOTAL WORKING CAPITAL FUND	4,570.9	334.6	5,882.2	56.1	489.6	784.7	10.1	89.1

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1989 ACTUAL
(in thousands of dollars)

DIRECT BILLINGS	FINE ARTS	DELAWARE RIV.BAS. COMM.	SUSQUHA. RIV.BAS. COMM.	ADV.COUN. HIST. PRESERV.	TAKE PRIDE IN AMERICA	OTHER		TOTAL
DEPARTMENTAL MEDALS.......								44.0
ITC CONTRACTED TRAINING...				0.4				24.2
PRINT PLANT & COPY CENTERS				10.9		4.0		2,434.3
POSTAGE..................						34.3		823.4
MIS. & LEGISLATIVE PRINT..						1.0		468.8
PATENT FEES...............								17.7
CONS'L PROCUREMENT-SPACE..								48.0
CONS'L PROCUREMENT-GEN SVS				0.5				224.7
CONS'L TELECOMMUNICATIONS.								4.0
CONS'L MAINT & ALTERATNS..								322.3
INVENTORY DISTRIBUTION....								15.5
AIRCRAFT SERVICES.........						11,944.0		66,210.0
ST-DIRECT BILLINGS........	0.0	0.0	0.0	11.8	0.0	11,983.3		70,636.9
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.					7.5			122.7
OS BUDGET OPERATIONS......	3.6	3.6	3.6	3.6		0.5		239.7
ALLEX DATA BASE...........								30.0
MEDICAL & HEALTH SERV.....								406.3
DEPT'L HUMAN RES. DEV. CT.								677.8
INFORMATION TECHNOLOGY CT.								243.8
PRINTING & PUBLICATION....				0.9				495.2
ENFORCE. & SECURITY MGMT..								891.7
WCF DIRECTION.............	0.3	0.3	0.3	1.3		0.9		305.9
FISCAL SERVICES...........	10.4	5.8	5.8	33.2		23.4		1,461.7
GENERAL SERVICES..........	1.7	1.5	1.5	4.4				2,578.3
SPACE & FACILITIES MGMT...		0.1	0.1	0.6				976.7
PERSONNEL SERVICES........	2.6	1.1	1.1	28.8		42.2		1,324.3
ST-CENT. ADMIN. SERV......	18.6	12.4	12.4	72.8	7.5	67.0		9,754.1
RESERVE...................								0.0
TOTAL WORKING CAPITAL FUND	18.6	12.4	12.4	84.6	7.5	12,050.3	0.0	80,391.0

Standard Form 220
November 1988
I TFM 2-4100

REPORT ON FINANCIAL POSITION
AS OF SEPTEMBER 30, 1989
(in dollars)

Page 1 of 3
IAR No. 1178-TD-XX

IDENTIFICATION:
DEPARTMENT/AGENCY: INTERIOR, OFFICE OF THE SECRETARY, WCF
BUREAU/ORGANIZATIONAL UNIT: FRB L-200-001
OMB IDENTIFICATION CODE: 14-4523 FUND TYPE: 1

Assets	Amount	Total current period
1. Fund balance with Treas. & cash (SF 220-1)		
a. Fund balance(s)	10267418	
b. Cash	0	
c. Foreign currency, net	0	
d. Subtotal		10267418
2. Accounts receivable (SF 220-9)		
a. Federal agencies		
1. Current	7725672	
2. Noncurrent	0	
b. Public		
1. Current	430959	
2. Noncurrent	0	
c. Less: Allowances	0	
d. Subtotal		8156631
3. Advances and prepayments		
a. Federal agencies	0	
b. Public	14411	
c. Subtotal		14411
4. Inventories (SF 220-1)		
a. Operating consumables	341344	
b. Product or service components	0	
c. Stockpiled materials	0	
d. Other		
1.		
2.		
3.		
4.		
e. Subtotal		341344
5. Investments, net (SF 220-1)		
a. Federal securities		
b. Non-Federal securities		
c. Other		
1.		
2.		
3.		
4.		
d. Subtotal		
6. Loans receivable (SF 220-8, SF 220-9)		
a. Federal agencies		
1. Current		
2. Noncurrent		
b. Public		
1. Current		
2. Noncurrent		
c. Less: Allowances		
d. Subtotal		

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1990 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	LAND MGMT.	RECLM.	NATL. PARK SERV.	FISH & WILDLIFE SERV.	U.S. GEOLOG. SURVEY	MINERAL MGMT. SERV.	MINES	SURFACE MINING
DEPARTMENTAL MEDALS.......	3.8	2.9	4.5	3.8	12.9	1.3	2.7	0.6
ITC CONTRACTED TRAINING...	2.8	0.6	2.2	2.6	0.1	0.2	5.5	0.9
PRINT PLANT & COPY CENTERS	249.5	150.4	236.2	184.3	51.5	97.2	15.0	212.7
POSTAGE..................	136.2	51.0	68.6	1.0	3.1	19.4	8.7	15.8
MIS. & LEGISLATIVE PRINT..	135.2	77.1	129.1	69.6	304.3	52.2	87.0	43.5
PATENT FEES..............		1.1			2.3		16.6	
CONS'L PROCUREMENT-SPACE..								
CONS'L PROCUREMENT-GEN SVS	10.5							
CONS'L TELECOMMUNICATIONS.	12.5	15.2	68.1	27.4	0.4	5.8	2.5	28.9
CONS'L MAINT & ALTERATNS..	15.5	11.8	11.0	13.1	7.3	10.3	5.8	17.2
INVENTORY DISTRIBUTION....	0.5	0.6	1.5	4.6	0.5	0.5	0.6	
AIRCRAFT SERVICES.........	20,976.0	1,767.0	7,239.0	5,067.3	2,445.3	6,423.9	381.9	319.2
ST-DIRECT BILLINGS........	21,542.5	2,077.7	7,760.2	5,373.7	2,827.7	6,610.8	526.3	638.8
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	9.2	11.9	6.6	10.6	4.6	22.4	0.7	29.0
OS BUDGET OPERATIONS......	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
ALLEX DATA BASE...........	6.9		3.9	5.1	3.3	3.9	0.3	0.3
MEDICAL & HEALTH SERV.....	37.4	19.7	57.6	41.4	18.8	7.8	100.7	11.3
DEPT'L HUMAN RES. DEV. CT.	134.1	85.5	154.3	84.4	163.9	55.2	37.0	25.9
INFORMATION TECHNOLOGY CT.	30.9	14.1	30.9	30.9	2.8	28.1	28.1	30.9
PRINTING & PUBLICATION....	45.3	14.5	86.2	60.5	52.4	26.4	22.6	27.0
ENFORCE. & SECURITY MGMT..	116.7	29.1	90.2	69.0	5.6	41.0	4.1	62.5
WCF DIRECTION............	26.7	12.5	24.7	18.2	14.8	12.1	6.7	11.7
FISCAL SERVICES...........	16.1	38.4	14.6	16.6	15.6	16.6	13.1	13.7
GENERAL SERVICES..........	169.5	64.2	129.2	150.1	59.1	59.5	44.7	57.5
SPACE & FACILITIES MGMT...	245.3	126.5	303.4	166.4	37.4	99.9	112.6	200.5
PERSONNEL SERVICES........	2.7	1.0	2.7	2.7	1.0	1.0	1.0	1.0
ST-CENT. ADMIN. SERV......	849.8	426.4	913.3	664.9	388.3	382.9	380.6	480.3
RESERVE..................	12.8	10.0	20.2	12.8	7.1	5.9	6.0	9.0
TOTAL WORKING CAPITAL FUND	22,405.1	2,514.1	8,693.7	6,051.4	3,223.1	6,999.6	912.9	1,128.1

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1990 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	INDIAN AFFAIRS	TERR.	OFFICE OF THE SECRETARY	YOUTH PROGRAMS	INSPECTOR GENERAL	SOLICITOR	ALASKA LAND USE COUNCIL	CONST MGMT
DEPARTMENTAL MEDALS.......	3.2		4.3					
ITC CONTRACTED TRAINING...	2.4	0.2	3.8		0.8	2.3		0.2
PRINT PLANT & COPY CENTERS	167.9	19.7	590.7	2.8	60.0	81.0		9.0
POSTAGE..................	150.4	5.8	282.5	0.5	42.2	47.9	1.7	0.1
MIS. & LEGISLATIVE PRINT..	43.5	5.2	170.9	2.2	13.5	39.1		1.6
PATENT FEES...............								
CONS'L PROCUREMENT-SPACE..		18.4	166.9	2.5	11.1	14.5		0.6
CONS'L PROCUREMENT-GEN SVS		10.1	296.1	2.3	26.3	19.9		1.9
CONS'L TELECOMMUNICATIONS.	20.3	2.2	53.6	0.3	2.1	9.9		0.6
CONS'L MAINT & ALTERATNS..	16.2	8.8	104.3	1.3	11.0	11.0		5.0
INVENTORY DISTRIBUTION....		0.1	1.0			0.1		
AIRCRAFT SERVICES.........	3,636.6	-	34.2					
ST-DIRECT BILLINGS........	4,040.5	70.5	1,708.3	11.9	167.0	225.7	1.7	19.0
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	4.0	1.3	21.1		1.3		0.7	
OS BUDGET OPERATIONS......	9.0	7.5	180.0	1.2	7.5	7.5	0.6	0.6
ALLEX DATA BASE...........	5.7		0.3			0.3		
MEDICAL & HEALTH SERV.....	36.6	0.1	51.8		8.3	10.5		
DEPT'L HUMAN RES. DEV. CT.	128.3		31.5		6.4	6.5		
INFORMATION TECHNOLOGY CT.	30.9		47.8		2.8	2.8		
PRINTING & PUBLICATION....	38.2	1.4	250.0	1.4	25.4	23.7		
ENFORCE. & SECURITY MGMT..	115.1	29.0	344.7	4.0	27.1	56.1		5.8
WCF DIRECTION.............	24.4	9.3	115.5	1.0	14.3	18.5	0.3	1.7
FISCAL SERVICES...........	21.6	184.0	224.0	37.1	294.7	305.7	7.7	39.0
GENERAL SERVICES..........	217.5	70.1	1,337.0	5.2	98.3	115.6		12.7
SPACE & FACILITIES MGMT...	312.5	53.5	921.3	10.5	63.1	178.5		24.6
PERSONNEL SERVICES........	1.0	40.4	1,060.3		0.1	159.2	2.8	34.6
ST-CENT. ADMIN. SERV......	944.8	396.6	4,585.3	60.4	549.3	884.9	12.1	119.0
RESERVE..................	17.9	7.0	94.4		8.4	13.5		
TOTAL WORKING CAPITAL FUND	5,003.2	474.1	6,388.0	72.3	724.7	1,124.1	13.8	138.0

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1990 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	FINE ARTS	DELAWARE RIV.BAS. COMM.	SUSQUHA. RIV.BAS. COMM.	ADV.COUN. HIST. PRESERV.	TAKE PRIDE IN AMERICA	OTHER		TOTAL
DEPARTMENTAL MEDALS.......								40.0
ITC CONTRACTED TRAINING...				0.4				25.0
PRINT PLANT & COPY CENTERS				8.1				2,136.0
POSTAGE..................	0.5					64.6		900.0
MIS. & LEGISLATIVE PRINT..				0.8		0.2		1,175.0
PATENT FEES...............								20.0
CONS'L PROCUREMENT-SPACE..	0.3			1.7				216.0
CONS'L PROCUREMENT-GEN SVS				7.9				375.0
CONS'L TELECOMMUNICATIONS.		0.1	0.1					250.0
CONS'L MAINT & ALTERATNS..				0.4				250.0
INVENTORY DISTRIBUTION....								10.0
AIRCRAFT SERVICES.........						8,709.6		57,000.0
ST-DIRECT BILLINGS........	0.8	0.1	0.1	19.3	0.0	8,774.4		62,397.0
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.					8.6			132.0
OS BUDGET OPERATIONS......	3.0	3.0	3.0	4.5		0.6		300.0
ALLEX DATA BASE...........								30.0
MEDICAL & HEALTH SERV.....								402.0
DEPT'L HUMAN RES. DEV. CT.								913.0
INFORMATION TECHNOLOGY CT.								281.0
PRINTING & PUBLICATION....				1.0				676.0
ENFORCE. & SECURITY MGMT..								1,000.0
WCF DIRECTION.............	0.4	0.3	0.3	1.6				315.0
FISCAL SERVICES...........	16.1	9.6	9.6	46.0		28.2		1,368.0
GENERAL SERVICES..........	1.7	1.8	1.8	4.5				2,600.0
SPACE & FACILITIES MGMT...		0.1	0.1	0.8				2,857.0
PERSONNEL SERVICES........	10.7	3.2	3.2	36.5		42.9		1,408.0
ST-CENT. ADMIN. SERV......	31.9	18.0	18.0	94.9	8.6	71.7		12,282.0
RESERVE..................								225.0
TOTAL WORKING CAPITAL FUND	32.7	18.1	18.1	114.2	8.6	8,846.1		74,904.0

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1991 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	LAND MGMT.	RECLM.	NATL. PARK SERV.	FISH & WILDLIFE SERV.	U.S. GEOLOG. SURVEY	MINERAL MGMT. SERV.	MINES	SURFACE MINING
DEPARTMENTAL MEDALS.......	4.1	4.6	3.1	3.6	10.0	2.3	3.9	0.2
ITC CONTRACTED TRAINING...	2.8	0.6	2.2	2.6	0.1	0.2	5.5	0.9
PRINT PLANT & COPY CENTERS	268.9	84.3	277.2	232.2	48.8	79.9	31.5	96.4
POSTAGE..................	175.4	54.5			3.4	27.0		
MIS. & LEGISLATIVE PRINT..	64.7	104.0	63.8	33.3	145.6	24.9	21.8	20.8
PATENT FEES..............		1.1			2.3		16.6	
CONS'L PROCUREMENT-SPACE..								
CONS'L PROCUREMENT-GEN SVS		0.5		8.1				
CONS'L TELECOMMUNICATIONS.	12.5	15.2	68.1	27.4	0.4	5.8	2.5	28.9
CONS'L MAINT & ALTERATNS..	15.5	11.8	11.0	13.1	7.3	10.3	5.8	17.2
INVENTORY DISTRIBUTION....	0.7	0.8	2.1	6.4	0.7	0.7	0.8	
AIRCRAFT SERVICES.........	24,119.2	1,829.0	6,832.2	4,979.6	2,531.1	6,649.3	330.4	318.6
ST-DIRECT BILLINGS........	24,663.8	2,106.4	7,259.7	5,306.3	2,749.7	6,800.4	418.8	483.0
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	14.4	9.1	15.5	12.4	4.6	19.3	4.1	34.7
OS BUDGET OPERATIONS......	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
ALLEX DATA BASE...........	6.9		3.9	5.1	3.3	3.9	0.3	0.3
MEDICAL & HEALTH SERV.....	44.1	20.5	43.8	50.6	21.5	5.3	112.0	16.5
DEPT'L HUMAN RES. DEV. CT.	149.8	88.2	186.2	89.2	172.3	54.0	39.9	36.3
INFORMATION TECHNOLOGY CT.	36.7	7.1	31.9	18.5	1.2	10.2	15.5	12.4
PRINTING & PUBLICATION....	52.9	51.3	78.6	83.2	102.0	22.3	29.0	17.6
ENFORCE. & SECURITY MGMT..	117.2	29.2	90.6	69.3	5.6	41.2	4.1	62.8
SAFETY MANAGEMENT.........	77.1	55.7	131.9	53.2	73.6	15.5	17.5	8.8
WCF DIRECTION.............	22.9	26.2	16.4	26.2	14.4	13.1	3.7	13.1
FISCAL SERVICES...........	11.4	39.4	11.9	12.0	11.7	11.9	10.9	10.9
GENERAL SERVICES..........	169.4	66.2	131.5	151.0	61.3	61.6	46.4	58.6
SPACE & FACILITIES MGMT...	115.5	79.1	215.4	110.4	23.6	72.9	23.6	152.7
PERSONNEL SERVICES........	2.9	1.1	2.9	2.9	1.1	1.1	1.1	1.1
ST-CENT. ADMIN. SERV......	830.2	482.1	969.5	693.0	505.2	341.3	317.1	434.8
RESERVE...................	16.8	13.1	26.5	16.8	9.4	7.8	7.8	11.8
TOTAL WORKING CAPITAL FUND	25,510.8	2,601.6	8,255.7	6,016.1	3,264.3	7,149.5	743.7	929.6

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1991 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	INDIAN AFFAIRS	TERR.	OFFICE OF THE SECRETARY	YOUTH PROGRAMS	INSPECTOR GENERAL	SOLICITOR	ALASKA LAND USE COUNCIL	CONST MGMT
DEPARTMENTAL MEDALS.......	1.3		6.7		0.2			
ITC CONTRACTED TRAINING...	2.4	0.2	3.8		0.8	2.3		0.2
PRINT PLANT & COPY CENTERS	263.3	16.8	622.3		54.8	121.2		9.6
POSTAGE..................	272.6	9.5	343.7	0.8	68.4	79.1		0.2
MIS. & LEGISLATIVE PRINT..	20.8	2.3	76.0		6.5	18.7		1.0
PATENT FEES...............								
CONS'L PROCUREMENT-SPACE..		18.4	166.9	2.5	11.1	14.5		0.6
CONS'L PROCUREMENT-GEN SVS		18.5	352.4		38.5	25.2		7.6
CONS'L TELECOMMUNICATIONS.	20.3	2.2	53.6	0.3	2.1	9.9		0.6
CONS'L MAINT & ALTERATNS..	16.2	8.8	104.3	1.3	11.0	11.0		5.0
INVENTORY DISTRIBUTION....		0.1	1.6			0.1		
AIRCRAFT SERVICES.........	3,610.8		59.0					
ST-DIRECT BILLINGS........	4,207.7	76.8	1,790.3	4.9	193.4	282.0	0.0	24.8
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.	9.2	3.3	24.7		4.0	2.6		
OS BUDGET OPERATIONS......	9.0	7.5	180.0	1.2	7.5	7.5	0.6	0.6
ALLEX DATA BASE...........	5.7		0.3			0.3		
MEDICAL & HEALTH SERV.....	55.9	1.8	33.3		6.4	18.3		
DEPT'L HUMAN RES. DEV. CT.	172.4		46.9		7.2	6.6		
INFORMATION TECHNOLOGY CT.	16.8	1.1	134.0		3.1	9.0		1.5
PRINTING & PUBLICATION....	23.5	2.3	197.2		10.1	15.4		4.3
ENFORCE. & SECURITY MGMT..	115.6	29.1	346.9	4.0	27.2	55.4		4.4
SAFETY MANAGEMENT.........	101.2	0.3	7.3		2.2	2.7		
WCF DIRECTION.............	22.9	9.7	119.8		14.9	19.2		
FISCAL SERVICES...........	18.0	175.4	596.3	37.0	284.0	262.8	3.6	27.9
GENERAL SERVICES..........	218.7	72.9	1,394.2	4.0	102.6	119.5		13.1
SPACE & FACILITIES MGMT...	148.6	23.2	498.7	2.7	42.6	81.3		20.8
PERSONNEL SERVICES........	1.1	43.3	1,134.2		0.2	170.4	3.0	37.1
ST-CENT. ADMIN. SERV......	918.6	369.9	4,713.8	48.9	512.0	771.0	7.2	109.7
RESERVE...................	23.6	9.2	124.4		11.0	17.8		
TOTAL WORKING CAPITAL FUND	5,149.9	455.9	6,628.5	53.8	716.4	1,070.8	7.2	134.5

WORKING CAPITAL FUND
REVENUE BY BUREAU AND FUNCTION
FY 1991 ESTIMATE
(in thousands of dollars)

DIRECT BILLINGS	FINE ARTS	DELAWARE RIV.BAS. COMM.	SUSQUHA. RIV.BAS. COMM.	ADV.COUN. HIST. PRESERV.	TAKE PRIDE IN AMERICA	OTHER		TOTAL
DEPARTMENTAL MEDALS.......								40.0
ITC CONTRACTED TRAINING...				0.4				25.0
PRINT PLANT & COPY CENTERS				12.8	17.0			2,237.0
POSTAGE..................	0.8				0.2	53.4		1,089.0
MIS. & LEGISLATIVE PRINT..				0.4		0.4		605.0
PATENT FEES..............								20.0
CONS'L PROCUREMENT-SPACE..	0.3			1.7				216.0
CONS'L PROCUREMENT-GEN SVS				24.2				475.0
CONS'L TELECOMMUNICATIONS.		0.1	0.1					250.0
CONS'L MAINT & ALTERATNS..				0.4				250.0
INVENTORY DISTRIBUTION....								14.0
AIRCRAFT SERVICES.........						7,740.8		59,000.0
ST-DIRECT BILLINGS........	1.1	0.1	0.1	39.9	17.2	7,794.6		64,221.0
CENTRALIZED ADMIN. SERVS.								
DEPT'L NEWS & INFO CENTER.					7.1			165.0
OS BUDGET OPERATIONS......	3.0	3.0	3.0	4.5		0.6		300.0
ALLEX DATA BASE...........								30.0
MEDICAL & HEALTH SERV.....								430.0
DEPT'L HUMAN RES. DEV. CT.								1,049.0
INFORMATION TECHNOLOGY CT.	0.5			0.6		4.9		305.0
PRINTING & PUBLICATION....				2.0	16.0	1.3		709.0
ENFORCE. & SECURITY MGMT..					1.4			1,004.0
SAFETY MANAGEMENT.........								547.0
WCF DIRECTION.............	0.4	0.3	0.3	1.6	0.2	1.7		327.0
FISCAL SERVICES...........	15.5	9.9	9.9	39.3	20.8	29.5		1,650.0
GENERAL SERVICES..........	1.8	1.8	1.8	4.6				2,681.0
SPACE & FACILITIES MGMT...		0.1	0.1	1.5	0.1	0.1		1,613.0
PERSONNEL SERVICES........	11.5	3.5	3.5	39.0		46.0		1,507.0
ST-CENT. ADMIN. SERV......	32.7	18.6	18.6	93.1	45.6	84.1		12,317.0
RESERVE...................								296.0
TOTAL WORKING CAPITAL FUND	33.8	18.7	18.7	133.0	62.8	7,878.7		76,834.0

Page 2 of 3

REPORT ON FINANCIAL POSITION
AS OF SEPTEMBER 30, 1989
(in dollars)

BUREAU/ORGANIZATIONAL UNIT: FRB L-200-001

Assets - Continued	Amount	Total current period
7. Property, plant and equip. net (SF 220-1)		
a. Structures, facil. & leasehold improv.	1284829	
b. Military equipment	0	
c. ADP Software	124716	
d. Equipment	8992235	
e. Assets under capital lease	0	
f. Other		
1.		
2.		
3.		
4.		
g. Construction-in-progress	0	
h. Land	0	
i. Allowances	-1531850	
j. Subtotal		8869930
8. Other assets		
a.		
b.		
c.		
d.		
e. Subtotal		
9. Total assets		27649734
Liabilities		
10. Accounts payable		
a. Federal agencies	10977735	
b. Public	2321897	
c. Subtotal		13299632
11. Interest payable		
a. Federal agencies	0	
b. Public	223	
c. Subtotal		223
12. Accrued payroll and benefits		673724
13. Accrued unfunded annual leave		0
14. Unearned revenue (advances)		
a. Federal agencies	2902342	
b. Public	0	
c. Subtotal		2902342
15. Deposit funds		0
16. Debt issued under borrow auth. (SF 220-1)		
a. Gross Federal debt		
b. Intragovernmental debt		
c. Other debt		
d. Subtotal		
17. Actuarial liabilities (SF 220-1)		
a. Pension plans		
b. Insurance and annuity programs		
c. Subtotal		

Page 3 of 3

REPORT ON FINANCIAL POSITION
AS OF SEPTEMBER 30, 1989
(in dollars)

BUREAU/ORGANIZATIONAL UNIT: FRB L-200-001

Liabilities - Continued	Amount	Total current period
18. Other liabilities		
a.		
b.		
c.		
d.		
e. Subtotal		
19. Total liabilities		16875921
Equity		
Appropriated Fund Equity		
20. Unexpended financed budget authority		
a. Unexpended appropriations	3593077	
b. Less: Unfilled customer orders(Federal)	-2030540	
c. Subtotal		1562537
21. Invested capital		0
Revolving Fund Equity		
22. Revolving fund balance(s)		
a. Appropriated capital	300000	
b. Cumulative results	-413328	
c. Donations	9324604	
d. Subtotal		9211276
Trust Fund Equity		
23. Trust fund balance(s)		0
24. Total equity		10773813
25. Total liabilities and equity		27649734

AGENCY CONTACTS

1. Preparer's name: SHEILA K. SMITH	2. Telephone No. (202)343-2729

3. Address
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18TH & C STS., N.W., RM 5257
WASHINGTON D.C. 20240

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Standard Form 221
November 1988
1 TFM 2-4100

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AR No. 1180-TD-AN

REPORT ON OPERATIONS
AS OF SEPTEMBER 30, 1989
(in dollars)

IDENTIFICATION:
DEPARTMENT/AGENCY: INTERIOR, OFFICE OF THE SECRETARY, WCF
BUREAU/ORGANIZATIONAL UNIT: FRB L-200-001
OMB IDENTIFICATION CODE: 14-4523 FUND TYPE: 1
BASIS USED:

FINANCING SOURCES	Amount	Total
1. Accrued expenditures		0
2. Revenue		
a. Federal Sources	80640679	
b. Public sources	0	
c. Subtotal		80640679
3. Governmental receipts		0
4. Other		
a.		
b.		
c.		
d.		
e. Subtotal		0
5. Less: Receipts returned to Treasury		0
6. Total financing sources		80640679
OPERATING EXPENSES		
7. Cost of goods sold		71776630
8. Operating/program expenses, funded		7500149
9. Interest expense, funded		
a. Federal Financing Bank/ Treasury borrowings	0	
b. Federal securities	0	
c. Other		
1. PROMPT PAYMENT ACT	11830	
2.		
3.		
4.		
d. Subtotal		11830
10. Other funded expenses		
a.		
b.		
c.		
d.		
e. Subtotal		0
11. Unfunded expenses		458494
12. Total operating expenses		79747103

Page 2 of 2

REPORT ON OPERATIONS
AS OF SEPTEMBER 30, 1989
(in dollars)

BUREAU/ORGANIZATIONAL UNIT: FRB L-200-001

NET RESULTS	Amount	Total
13. Net results before adjustments		893576
14. Less: Capital expenditures (all funds refer to the instructions)		-454938
15. Less: Extraordinary items		-79721
16. Net results		358917

AGENCY CONTACTS

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4. Supervisor's name T.L. GARRETT	5. Telephone No. (202)343-5027

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WORKING CAPITAL FUND

(Program and Financing (in thousands of dollars)

Identification code 14-4523-0-4-306	1989 Actual	1990 Estimate	1991 Estimate
Program by activities:			
Operating expenses/sales program:			
(a) Goods and services sold............	14,984	17,904	17,834
(b) Aircraft services..................	66,074	57,000	59,000
10.0001 Total obligations..............	81,058	74,904	76,834
Financing:			
11.0001 Offsetting collections from: Federal funds.....................	(81,058)	(74,904)	(76,834)
40.0001 Budget authority..............	0	0	0
Relation of obligations to outlays:			
71.0001 Obligations incurred, net...........	0	0	0
72.9801 Obligated balance, start of year Fund balance......................	4,158	10,267	10,267
74.9801 Obligated balance, end of year Fund balance......................	(10,267)	(10,267)	(10,267)
90.0001 Outlays.........................	(6,109)	0	0

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WORKING CAPITAL FUND

Object Classification (in thousands of dollars)

	Identification code 14-4523-0-4-306	1989 Actual	1990 Estimate	1991 Estimate
	Reimbursable obligations:			
	Personnel compensation:			
511.101	Full-time permanent	9,045	10,137	11,143
511.301	Other than full-time permanent	496	411	438
511.501	Other personnel compensation	385	235	260
511.801	Special personal services payments	8	225	296
511.901	Total personnel compensation	9,934	11,008	12,137
512.101	Personnel benefits: Civilian	1,675	1,740	1,968
521.001	Travel and transportation of persons	566	646	738
522.001	Transportation of things	55	80	80
523.101	Rental payments to GSA	0	19	21
523.301	Communications, utilities, and miscellaneous charges	1,071	1,522	1,764
524.001	Printing and reproduction	761	1,525	975
525.001	Other services	62,543	53,596	53,844
526.001	Supplies and materials	3,490	3,241	3,471
531.001	Equipment	963	1,527	1,836
999.901	Total obligations	81,058	74,904	76,834

Personnel Summary

Identification code 14-4523-0-4-306	1989 Actual	1990 Estimate	1991 Estimate
Total number of full-time permanent positions	308	285	290
Total compensable workyears:			
Full-time equivalent employment	291	318	324
Full-time equivalent of overtime and holiday hours	8	8	8
Average GS/GM grade	9.1	9.1	9.1
Average GS/GM salary	$33,183	$34,083	$34,978
Average salary of ungraded positions	$12,625	$12,712	$13,046

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
MISCELLANEOUS EXPIRING APPROPRIATIONS

Program and Financing (in thousands of dollars)

Identification code 14-9911-0-1-300	1989 Actual	1990 Estimate	1991 Estimate
Financing:			
17.0001 Recovery of prior year obligations..	0	-1	0
21.4001 Unobligated balance available, start of year.....................	-36	-36	0
24.4001 Unobligated balance available, end of year.......................	36	0	0
25.0001 Unobligated balance lapsing.........	0	37	0
40.0001 Budget authority	0	0	0
Relation of obligations to outlays:			
71.0001 Obligations incurred, net...........	0	0	0
72.4001 Obligated balance, start of year....	1	1	0
74.4001 Obligated balance, end of year......	-1	0	0
78.0001 Adjustments in unexpired accounts...	0	-1	0
90.0001 Outlays.........................	0	0	0

Note: Amounts above reflect the spendout of available funds for issues related to water policy.

GENERAL PROVISIONS, DEPARTMENT OF THE INTERIOR

The following sections are proposed for deletion and do not appear below:

Sec. 109	Prohibition against use of funds to detail any employee to an organization unless such detail is in accordance with Office of Personnel Management Regulations.
Sec. 110, 111	Prohibition against use of funds to conduct leasing, drilling or other exploration activity, on lands within the Eastern Gulf of Mexico planning area and on lands within the North Aleutian Basin planning area.
Sec. 112	Prohibition against use of funds for the conduct of publishing draft environmental impact statements until the Outer Continental Shelf Task Force releases its report to the President on Lease Sales 91, 95 and 116 and leasing activities in Northern, Southern and Central California.
Sec. 113	Prohibition against use of funds for the conduct of leasing activities in the Atlantic Ocean beyond the territorial limits of Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware and Maryland.
Sec. 114	Prohibition against use of funds for the conduct of preleasing and leasing activities of lands described in section 107 of Public Law 99–190 or lands surrounding Georges Bank.
Sec. 115	Designation of agency component or headquarters operation to be relocated to Avondale, Maryland.
Sec. 116, 117	Prohibition on use of funds for the implementation or financing of agreements with entities for the management of all lands, waters, and interests on Matagorda Island, Texas.
Sec. 118	Defines the term "Class II gaming" in Public Law 100–497 for any Indian tribe located in the State of Minnesota.
Sec. 119	Prohibition on use of funds to prepare reports on contacts between employees of Department of the Interior and Members and Committees of Congress and their staff.
Sec. 120	Amendments to sections 13 and 32 of Public Law 93–531, the Navajo and Hopi Land Settlement Act, which authorized the expenditure of funds for the Navajo Rehabilitation Trust Fund.

GENERAL PROVISIONS, DEPARTMENT OF THE INTERIOR

SEC. 101. Appropriations made in this title shall be available for expenditure or transfer (within each bureau or office), with the approval of the Secretary, for the emergency reconstruction, replacement, or repair of aircraft, buildings, utilities, or other facilities or equipment damaged or destroyed by fire, flood, storm, or other unavoidable causes: *Provided*, That no funds shall be made available under this authority until funds specifically made available to the Department of the Interior for emergencies shall have been exhausted[: *Provided further*, That all funds used pursuant to this section must be replenished by a supplemental appropriation which must be requested as promptly as possible].

SEC. 102. The Secretary may authorize the expenditure or transfer of any no year appropriation in this title, in addition to the amounts included in the budget programs of the several agencies, for the suppression or emergency prevention of forest or range fires on or threatening lands under jurisdiction of the Department of the Interior; for the emergency rehabilitation of burned-over lands under its jurisdiction; for emergency actions related to potential or actual earthquakes, floods, [or] volcanoes, *storms, or other unavoidable causes*; for contingency planning subsequent to actual oilspills, response and natural resource damage assessment activities related to actual oilspills; for the prevention, suppression, and control of actual or potential grasshopper and Mormon Cricket outbreaks on lands under the jurisdiction of the Secretary, pursuant to the authority in Section 1773(b) of Public Law 99-198 (99 Stat. 1658); for emergency reclamation projects under section 410 of Public Law 95-87; and shall transfer, from any no year funds available to the Office of Surface Mining Reclamation and Enforcement, such funds as may be necessary to permit assumption of regulatory authority in the event a primacy State is not carrying out the regulatory provisions of the Surface Mining Act: *Provided*, That appropriations made in this title for fire suppression purposes shall be available for the payment of obligations incurred during the preceding fiscal year, and for reimbursement to other Federal agencies for destruction of vehicles, aircraft, or other equipment in connection with their use for fire suppression purposes, such reimbursement to be credited to appropriations currently available at the time of receipt thereof[: *Provided further*, That all funds used pursuant to this section must be replenished by a supplemental appropriation which must be requested as promptly as possible].

SEC. 103. Appropriations made in this title shall be available for operation of warehouses, garages, shops, and similar facilities, wherever consolidation of activities will contribute to efficiency or economy, and said appropriations shall be reimbursed for services rendered to any other activity in the same manner as authorized by sections 1535 and 1536 of title 31, U.S.C.: *Provided*, That reimbursements for costs and supplies, materials, equipment, and for services rendered may be credited to the appropriation current at the time such reimbursements are received.

SEC. 104. Appropriations made to the Department of the Interior in this title shall be available for services as authorized by 5 U.S.C. 3109, when authorized by the Secretary, in total amount not to exceed $500,000; hire, maintenance, and operation of aircraft; hire of passenger motor vehicles; purchase of reprints; payment for telephone service in private residences in the field, when authorized under regulations approved by the Secretary; and the payment of dues, when authorized by the Secretary, for library membership in societies or associations which issue publications to members only or at a price to members lower than to subscribers who are not members.

SEC. 105. Appropriations available to the Department of the Interior for salaries and expenses shall be available for uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902 and D.C. Code 4-204).

SEC. 106. Appropriations made in this title shall be available for obligation in connection with contracts issued by the General Services Administration for services or rentals for periods not in excess of twelve months beginning at any time during the fiscal year.

SEC. 107. None of the funds appropriated or otherwise made available pursuant to this Act shall be obligated or expended to finance changing the name of the mountain located 63 degrees, 04 minutes, 15 seconds west, presently named and referred to as Mount McKinley.

SEC. 108. Notwithstanding any other provisions of law, appropriations in this title shall be available to provide insurance on official motor vehicles, aircraft, and boats operated by the Department of the Interior in Canada and Mexico.

SEC. 109. In fiscal year 1991 and thereafter, the Secretary may exercise the authorities granted in the Act of July 1, 1955 (16 U.S.C. 18f) in administration of the Department of the Interior Museum, and may dispose of objects no longer needed for the Museum or held in duplicate among museum properties and apply the proceeds to the purchase of museum objects, museum collections, and other personal properties at reasonable prices. (Department of the Interior and Related Agencies Appropriations Act, 1990.)

GENERAL PROVISIONS, DEPARTMENT OF THE INTERIOR

The following section is proposed for deletion and does not appear below:

Sec. 205 ...... Deletion of Section 210 of the Energy and Water Development Appropriations Act of 1988.

SEC. 201. Appropriations in this title shall be available for expenditure or transfer (within each bureau or office), with the approval of the Secretary, for the emergency reconstruction, replacement, or repair of aircraft, buildings, utilities or other facilities or equipment damaged or destroyed by fire, flood, storm, or other unavoidable causes: *Provided*, That no funds shall be made available under this authority until funds specifically made available to the Department of the Interior for emergencies shall have been exhausted.

SEC. 202. The Secretary may authorize the expenditure or transfer (within each bureau or office) of any appropriation in this title, in addition to the amounts included in the budget programs of the several agencies, for the suppression or emergency prevention of forest or range fires on or threatening lands under jurisdiction of the Department of the Interior.

SEC. 203. Appropriations in this title shall be available for operation of warehouses, garages, shops, and similar facilities, wherever consolidation of activities will contribute to efficiency, or economy, and said appropriations shall be reimbursed for services rendered to any other activity in the same manner as authorized by the Act of June 30, 1932 (31 U.S.C. 1535 and 1536): *Provided*, That reimbursements for costs of supplies, materials, equipment, and for services rendered may be credited to the appropriation current at the time such reimbursements are received.

SEC. 204. Appropriations in this title shall be available for hire, maintenance, and operation of aircraft; hire of passenger motor vehicles; purchases of reprints; payment for telephone services in private residences in the field, when authorized under regulations approved by the Secretary; and the payment of dues, when authorized by the Secretary, for library membership in societies or associations which issue publications to members only or at a price to members lower than to subscribers who are not members. *(Energy and Water Development Appropriations Act, 1990.)*

GENERAL PROVISIONS, DEPARTMENT OF THE INTERIOR

TITLE III—GENERAL PROVISIONS

The following provisions are proposed for deletion and do not appear below:

Sec. 303	Prohibition on use of funds for oil and natural gas leasing activities within the Shawnee National Forest, Illinois.
Sec. 304(a)(b)(c)	Prohibition on use of funds appropriated for the National Endowment for the Arts/Humanities to be used to promote, disseminate, or produce obscene materials.
Sec. 307	Prohibition on use of funds for oil, gas, or geothermal leasing activities on Federal lands in the Mount Baker-Snoqualmie National Forest, State of Washington.
Sec. 309	Prohibition to subjecting employment to any personnel ceiling or other personnel restriction except as provided by law.
Sec. 314	Provides that the FY 1990 pay raises be absorbed within appropriated levels.
Sec. 316	Requires an immediate supply of timber from the Kootenai National Forest and timber from the lodgepole pine timber type as defined in the Upper Yaak Draft EIS.
Sec. 317	Amendment to Section 320 of Public Law 98–473 to allow a tribe or tribal organization to retain rents and charges for the operation, maintenance, and repair of quarters.
Sec. 318	Requires the offer of an aggregate timber sale level of seven hundred million board feet of net merchantable timber from the national forests of Oregon and Washington for fiscal years 1989 and 1990.
Sec. 319	Amends (a)(1) Subchapter III of chapter 13 of title 31, United States Code by adding new section 1352. "Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions."

SEC. 301. The expenditure of any appropriation under this Act for any consulting service through procurement contract, pursuant to 5 U.S.C. 3109, shall be limited to those contracts where such expenditures are a matter of public record and available for public inspection, except where otherwise provided under existing law, or under existing Executive order issued pursuant to existing law.

SEC. 302. No part of any appropriation under this Act shall be available to the Secretaries of the Interior and Agriculture for use for any sale hereafter made of unprocessed timber from Federal lands west of the 100th meridian in the contiguous 48 States which will be exported from the United States, or which will be used as a substitute for timber from private lands which is exported by the purchaser: *Provided*, That this limitation shall not apply to specific quantities of grades and species of timber which said Secretaries determine are surplus to domestic lumber and plywood manufacturing needs.

SEC. [304] *303*. No part of any appropriation contained in this Act shall be available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which congressional action is not complete: *Provided*, That [—] *this section shall not apply to the normal communications between the Executive Branch and the Congress.*

SEC. [305] *304*. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

Sec. [306] *305.* None of the funds provided in this Act to any department or agency shall be obligated or expended to provide a personal cook, chauffeur, or other personal servants to any officer or employee of such department or agency except as otherwise provided by law.

Sec. [308] *306.* No assessments may be levied against any program, budget activity, subactivity, or project funded by this Act unless *notice of* such assessments [and the basis therefor are presented] *is given* to the Committees on Appropriations [and are approved by such Committees.]

Sec. [310] *307.* Notwithstanding any other provision of law, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Energy, and the Secretary of the Smithsonian Institution are authorized to enter into contracts with State and local governmental entities, including local fire districts, for procurement of services in the presuppression, detection, and suppression of fires on any units within their jurisdiction

Sec. [311] *308.* None of the funds provided by this Act to the United States Fish and Wildlife Service may be obligated or expended to plan for, conduct, or supervise deer hunting on the Loxahatchee National Wildlife Refuge.

Sec. [312] *309.* The Forest Service and Bureau of Land Management are to continue to complete as expeditiously as possible development of their respective Forest Land and Resource Management Plans to meet all applicable statutory requirements. Notwithstanding the date in section 6(c) of the NFMA (16 U.S.C. 1600), the Forest Service, and the Bureau of Land Management under separate authority, may continue the management of lands within their jurisdiction under existing land and resource management plans pending the completion of new plans. Nothing shall limit judicial review of particular activities on these lands: *Provided, however,* That there shall be no challenges to any existing plan on the sole basis that the plan in its entirety is outdated, or in the case of the Bureau of Land Management, solely on the basis that the plan does not incorporate information available subsequent to the completion of the existing plan: *Provided further,* That any and all particular activities to be carried out under existing plans may nevertheless be challenged.

Sec. [313] *310.* None of the funds in this Act may be used to plan, prepare, or offer for sale timber from trees classified as giant sequoia (sequoiadendron giganteum) which are located on National Forest System or Bureau of Land Management lands until an environmental assessment has been completed and the giant sequoia management implementation plan is approved. In any event, timber harvest within the identified groves will be done only to enhance and perpetuate giant sequoia. There will be no harvesting of giant sequoia specimen trees. Removal of hazard, insect, disease and fire killed giant sequoia other than specimen trees is permitted.

Sec. [315] *311.* [Section 9(a)(3) of Public Law 100-580 (102 Stat. 2932) is amended by inserting after the term "Council." the following: "The Yurok Transition Team may receive grants and enter into contracts for the purpose of carrying out this section and section 10(a) of this Act. Such grants and contracts shall be transferred to the Yurok Interim Council upon its organization.": *Provided,* That using $750,000 appropriated in the Energy and Water Development Appropriations Act, 1990, under "General Investigations, Corps of Engineers—Civil", the Secretary of the Army, acting through the Chief of Engineers, is directed to continue engineering and design of the McCook and Thornton Reservoirs, which are features of the Chicagoland Underflow Plan: *Provided further,* That] With respect to claims resulting from the performance of functions, during fiscal year [1990] *1991* only, or claims asserted after the effective date of this Act, but resulting from the performance of functions prior to fiscal year [1990] *1991*, under a contract, grant agreement, or cooperative agreement authorized by the Indian Self-Determination and Education Assistance Act of 1975, as amended (86 Stat. 2203; 25 U.S.C. 450 et seq.) or by Title V, Part B—Tribally Controlled School Grants of the Hawkins-Stafford Elementary and Secondary School Improvement Amendments of 1988, as amended (102 Stat. 385; 25 U.S.C. 2501 et seq.), an Indian tribe, tribal organization or Indian contractor is deemed to be part of the Bureau of Indian Affairs in the Department of the Interior or the Indian Health Service in the Department of Health and Human Services while carrying out any such contract or agreement and its employees are deemed employees of the Bureau or Service while acting within the scope of their employment in carrying out the contract or agreement: *Provided*, [*further*] That upon the effective date of this legislation, any civil action or proceeding involving such claims brought hereafter against any tribe, tribal organization, Indian contractor or tribal employee covered by this provision shall be deemed to be an action against the United States and will be defended by the Attorney General and be afforded the full protection and coverage of the Federal Tort Claims Act: *Provided further*, That beginning with the fiscal year ending September 30, 1991, and thereafter, the appropriate Secretary shall request through annual appropriations funds sufficient to reimburse the Treasury for any claims paid in the prior fiscal year pursuant to the foregoing provisions: *Provided further*, That nothing in this section shall in any way affect the provisions of section 102(d) of the Indian Self-Determination and Education Assistance Act of 1975, as amended (88 Stat. 2203; 25 U.S.C. 450 et seq.). *(Department of the Interior and Related Agencies Appropriations Act, 1990.)*

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Title 1

Sec. 101 & 102	The Department proposes to delete the last proviso, which requires that funds transferred pursuant to sections 101 and 102 must be replenished by a supplemental appropriation which must be requested as promptly as possible. The Department has in the past and plans in the future to seek, under most circumstances, supplemental funds to replenish funds transferred pursuant to sections 101 and 102. However, there will be instances where there are conditions of overall fiscal limitations or there is no programmatic need to replenish transferred no-year funds "as promptly as possible." Since it is not always necessary to replenish transferred funds through supplemental funding, the Department proposes to delete this proviso.
Sec. 102	The Department proposes to amend this section by adding language to include in the list of natural disasters "storms or other unavoidable causes." This will enable the Department to immediately respond to damages caused by disasters such as hurricane Hugo in 1989.
Sec. 109	The Department proposes to delete this section which requires that no funds provided in this title may be used to detail any employee to an organization unless such detail is in accordance with Office of Personnel Management regulations. The language restates existing OPM regulations and Departmental written policy, and retention of this section is not essential.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 110

The Department proposes to delete this section which restricts OCS leasing and prevents approval or permitting of any drilling or other exploration activity, on lands within the Eastern Gulf of Mexico planning area which lie south of 26 degrees North latitude and east of 86 degrees West longitude.

Section 18 of the Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA) requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program which provides for an equitable sharing of developmental benefits and environmental risks among the various OCS planning areas. In preparing the program, the Secretary is required to consider suggestions from other Federal agencies and from the Governor of any State which may be affected by the program. Leasing restrictions in appropriations acts prevent the Secretary from making the decision required by section 18 of the OCSLAA to balance the benefits and risks of offshore production among the various OCS planning areas.

Another portion of section 110 is the denial of approval of an exploration plan through an appropriations act moratorium rather than the established regulatory procedures.

A total of 73 leases were awarded in the area south of 26 degrees North latitude in the Eastern Gulf of Mexico offshore Florida in lease sales held during 1984 and 1985 for a total bonus of about $108 million. This is an area where the Congress previously imposed specific study requirements for collection of three years of physical oceanographic and biological resource data. All study requirements have been met.

In addition to the studies required by the Congress, the Department has participated with the State of Florida in task forces studying the area south of 26 degrees North latitude. Both interagency task forces have completed their environmental reports and the National Academy of Sciences has made recommendations regarding this area. In addition, several studies are both ongoing and planned. This area was also a subject of the study conducted by the President's Task Force on OCS Leasing and Development. The study report has been submitted to the President and is pending his decision, which will include decisions on future leasing and 73 existing leases, eliminating the need for continuation of section 110.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 111

The Department proposes to delete this section, which restricts OCS leasing or the approval or permitting of any drilling or other exploratory activity, on lands within the North Aleutian Basin planning area.

Section 18 of the Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA) requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program which provides for an equitable sharing of developmental benefits and environmental risks among the various OCS planning areas. In preparing the program, the Secretary is required to consider suggestions from other Federal agencies and from the Governor of any State which may be affected by the program. Leasing restrictions in appropriations acts prevent the Secretary from making the decision required by section 18 of the OCSLAA to balance the benefits and risks of offshore production among the various OCS planning areas.

The North Aleutian Basin is a frontier planning area that is in the initial stages of determining actual resource potential, which can only be completed by drilling. The Department recognized the importance of the environmental resources of the area and greatly reduced the sale area commensurate with the Governor of Alaska's requests. In addition, mitigating measures were included in the sale to further protect the biological resources. The North Aleutian sale resulted in only a few leases being awarded, which indicate limited activity in the area.

The prohibition in section 111 appeared to be a one-year prohibition with several studies requested by Congress. These studies are being planned and will be submitted by the Congressional deadline.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 112

The Department proposes to delete this section, which prohibits the publishing of draft environmental impact statements until five months after the President's Outer Continental Shelf Task Force releases its report on the conduct of leasing activities in the Northern, Central and Southern California planning areas.

Section 18 of the Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA) requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program that provides for an equitable sharing of developmental benefits and environmental risks among the various OCS planning areas. In preparing the program, the Secretary is required to consider suggestions from other Federal agencies and from the Governor of any State which may be affected by the program. Leasing moratoria cut short the Federal/State consultation processes and prohibit the Secretary from reaching the balancing required by sections 18 and 19 of the OCSLAA.

In the past, officials of the Department of the Interior have engaged in extensive consultation with the Congress and with the State of California to develop a balanced approach to offshore leasing. The President established a task force in February 1989 to review and resolve environmental concerns regarding OCS oil and gas lease sales in Southern and Northern California. The task force submitted its report to the President in early January. Since beginning its work, the task force conducted an extensive study of the issues involved in these two California offshore lease sale areas. As a result, work on these sales has been suspended pending the President's decision on the task force report. The terms of the moratorium, regarding not publishing the draft environmental impact statements, will be met this year and need not be repeated.

The Task Force report submitted to the President is pending his decision.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 113

The Department proposes to delete this section which prohibits the conduct of leasing activities or permitting of drilling activities in the nearshore areas of the Mid-Atlantic planning area.

Section 18 of the Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA) requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program that provides for an equitable sharing of developmental benefits and environmental risks among the various OCS planning area. In preparing the program, the Secretary is required to consider suggestions from other Federal agencies and from the Governor of any State which may be affected by the program. Leasing moratoria cut short the Federal/State consultation processes and prohibits the Secretary from reaching the balancing required by sections 18 and 19 of the OCSLAA.

The Mid-Atlantic OCS is believed to be natural gas prone, and if commercial deposits were found, adjacent coastal residents would benefit from a secure supply of natural gas. [Promoting the development of natural gas is consistent with the Administration's energy and environmental outlook.] The potential environmental effects of exploration and production of a gas prone area, such as the Mid-Atlantic, should be minimal. On the OCS, natural gas blowouts are highly unlikely. For these reasons, the Department does not believe that the imposition of moratoria for the protection of the environment of the coastal area are necessary.

The area covered by the moratorium encompasses one of the areas of highest industry interest in the planning area. This decreases the Nation's ability to fully assess the hydrocarbon potential of this part of the OCS. In addition, the imposition of that moratorium could inhibit the full delineation of resources may be discovered as a result of drilling on nearby leases. For these reasons the imposition of a moratorium is not appropriate.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 114

The Department proposes to delete this section, which restricts OCS Leasing in the North Atlantic Planning Area. Section 18 of Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA) requires the Secretary of the Interior to prepare a 5-year oil and gas leasing program, which provides for an equitable sharing of developmental benefits and environmental risks among the various OCS planning areas. The proposed 5-year program provides for this equitable sharing of benefits and risks. In preparing the program, the Secretary is required to consider suggestions from other Federal agencies and from the Governor of any State which may be affected by the program. Section 19 of the OCSLAA allows the Governor of any affected State to submit recommendations to the Secretary regarding the size, timing or location of the lease sale. The Secretary must accept the recommendations of the Governor if they provide for a reasonable balance between the national interest and the well-being of the citizens of the affected State.

Leasing restrictions in appropriations acts prevent the Secretary of the Interior from making the necessary balancing decisions among the various OCS planning areas. They also inhibit the extensive planning process that exits to gather environmental and geologic information, consult with Governors of affected States, and make decisions which balance the environmental risks with the potential for oil and gas development.

In pursuing a resolution of the long-term leasing status of the North Atlantic planning area, the Department contracted with the National Academy of Science's National Research Council (NRC) to conduct a fact-finding study to assess the adequacy of the scientific and technical information base for the North Atlantic Planning Area. The NRC study, which focuses primarily on potential hydrocarbon resources, and likely environmental impacts associated with their production, is tentatively scheduled to be completed in March 1990. The Department has also supported the approach that small working groups, including representatives from oil company, environmental, and fishing interests, should meet to explore conflict resolution strategies to resolve the leasing status of the area. Because of these efforts, the Department does not believe that a further moratorium is appropriate.

The Administration opposes moratoria, and prefers instead to manage these lands pursuant to the OCS Lands Act.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 115	The Department proposes to delete this section which requires the Secretary to determine which Interior agency component is to be relocated to Avondale, Maryland. This section requires completion of the designation in FY 1990 which has been done, and thus, this section does not need to be repeated in FY 1991.
Sec. 116 and 117	The Department proposes to delete these sections which require that no funds provided by this title be used for the implementation or financing of agreements or arrangements with entities for the management of all Federal lands, waters, and interests therein on Matagorda Island, Texas, unless such transfer is ratified by law. The Department of the Interior and the State of Texas are developing a cooperative agreement that would be acceptable to both parties. Such an agreement, although tentative, would provide the Fish and Wildlife Service with the lead responsibility for management of all wildlife populations and their habitat on Matagorda Island. Texas would be responsible for public use on Matagorda Island. The agreement would not be implemented until 1991.
Sec. 118	The Department proposes to delete this section which defines the term "Class II gaming" in Public Law 100-497 for any Indian tribe located in the State of Minnesota. This section is effective for one year only and is not necessary in FY 1991.
Sec. 119	The Department proposes to delete this section which prohibits use of funds to prepare reports on contacts between employees of the Department of the Interior and Members and Committees of Congress and their staff. Since this section was effective only on October 1, 1989, it need not be repeated in FY 1991.
Sec. 120	The Department proposes to delete this section which amends sections 13 and 32 of Public Law 93-531. This is permanent legislation and need not be repeated in FY 1991.
Sec. 109	The Department is proposing to add a new section which will give the Secretary comparable authority to manage the Department of the Interior Museum as the National Park Service has to manage park museums, including the authority to dispose of objects no longer needed or held in duplicate by the Department Museum. In addition, when appropriate, the section will enable the Secretary to sell unneeded museum objects and use the proceeds to acquire other museum objects.

DEPARTMENT OF THE INTERIOR
ENERGY AND WATER DEVELOPMENT APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Title II

Sec. 205	The Department proposes to delete this section which deletes section 210 of the Energy and Water Development Appropriations Act of 1988. This is permanent legislation and need not be repeated in FY 1991.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Title III

Sec 303 (Old)	The Department proposes to delete this section which prohibits noncompetitive leasing in the Shawnee National Forest. The prohibition has been in the Appropriations Act for several years and has outlived its initial intent--to stop potential degradation while the Forest was being considered for designation as a National Recreation Area. The language in this section does not prohibit mineral activity within the Shawnee, but restricts oil and gas leasing to competitive leasing. All leasing is conducted competitively in accordance with the Federal Onshore Oil and Gas Leasing Reform Act of 1987 (Public Law 100-203). The only time non-competitive bids would be accepted is when there are no other competitive bids. This is not unlike other leasing, and thus it is not necessary to single out Shawnee National Forest for special consideration.
Sec. 303 (New)	The Department proposes to add language to this section to clarify that the prohibited use of any appropriation contained in this Act for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which congressional action is not complete, is not incorrectly interpreted to apply to the normal communications, including those involving consideration of appropriations bills, between the Executive Branch and the Congress.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 306	The Department proposes to delete the portion of this section that requires approval of the committees in order to levy any assessments against any program, budget activity, subactivity, or project funded in this Act, as this requirement contains an unconstitutional legislative veto as defined by the U.S. Supreme Court in INS vs. Chadha. However, language is proposed to be added to this section that will require the Department to notify the Committees on Appropriations prior to levying any such assessments.
Sec. 309	The Department proposes to delete this section which provides that employment funded by this Act shall not be subject to any personnel ceiling or other personnel restriction for permanent or other than permanent employment except as provided by law. This section results in an undue restriction on Executive Branch responsibility for efficient management of the Executive Branch.
Sec. 311	The Department is proposing to delete the portion of this section which amends Section 9(a)(3) of Public Law 100-580 (102 Stat 2932) as this is permanent legislation and need not be repeated in FY 1991. The Department is also proposing deletion of the portion of this section which would require the Secretary to seek appropriations to reimburse the Treasury for any claims paid on behalf of tribal contractors pursuant to the Federal Tort Claims Act. As the funds would have to be withdrawn from the Treasury to pay back to the Treasury, there is no tangible benefit to be derived from such a bookkeeping transaction. The Department proposes to amend the section to extend coverage under the Federal Tort Claims Act to tribal contractors for fiscal year 1991. During fiscal year 1990 a study will be conducted analyzing the implications of various options available to the Secretaries of the Interior and Health and Human Services to provide liability insurance or equivalent coverage to tribal contractors as required by the Indian Self-Determination Amendments of 1988. Once the study has been completed and the alternatives weighed, the Administration will propose a permanent method of meeting the legislative requirement.
Sec. 314	The Department proposes to delete this section which provides that the FY 1990 pay raises be absorbed within appropriated levels. This section applies to the FY 1990 pay raise and need not be repeated in FY 1991.

DEPARTMENT OF THE INTERIOR
INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT

FY 1991 General Provisions

Explanation of Language Changes

Sec. 317 The Department proposes to delete this section which amended section 320 of Public Law 98-473 to allow a tribe or tribal organization to retain rents and charges for the operation, maintenance, and repair of quarters. This is permanent legislation and need not be repeated in FY 1991.

Sec. 318 The Department proposes to delete this section which requires the offer of certain aggregate timber sale levels from the national forests of Oregon and Washington and Bureau of Land Management Lands in Western Oregon for fiscal years 1989 and 1990. Since the requirement applies only through FY 1990, it need not be repeated in FY 1991.

Sec. 319 The Department proposes to delete this section, which amends (a)(1) Subchapter III of Chapter 13 of title 31, United States Code by adding new section 1352, "Limitation on use of appropriated funds to influence certain Federal contracting." This is permanent legislation and need not be repeated in FY 1991.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUDGET JUSTIFICATIONS, F.Y. 1991

March 3, 1849

OFFICE OF THE SOLICITOR

NOTICE: These budget justifications are prepared for the Interior and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained through the Office of Budget of the Department of the Interior.

DEPARTMENT OF THE INTERIOR

OFFICE OF THE SOLICITOR

Fiscal Year 1991 Budget

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DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
GENERAL STATEMENT

The Office of the Solicitor provides legal advice and counsel to the various offices and bureaus within the Department of the Interior. The Office advises, represents, and assists the Secretary, his staff, and the bureaus and offices in accomplishing their statutory obligations and the goals of the Administration.

The Solicitor's Office fully supports the Secretary's initiatives to protect and enhance the nation's natural resources, to promote excellence in education, to encourage the employment and involvement of women and minorities, to encourage volunteer stewardship, and to play an important role in the war on drugs. This is accomplished by providing legal counsel to all of the Department's bureaus and offices in implementing these initiatives.

Specific legal services provided by the Solicitor's Office include representation in both administrative and judicial litigation, preparation of legal opinions, legal review of legislation, regulations, contracts and other documents, and provision of informal legal counsel.

The Solicitor's Office, at its headquarters in Washington, is organized into divisions which are structured so as to serve specific program areas. Legal support for the field activities of the Department's bureaus and offices is provided throughout the United States by the Solicitor's regional and field offices.

Comparison of 1991 Estimate with 1990 Enacted Level

(Dollar amounts in thousands)

		FY 1990 Enacted to Date	FY 1990 Adjusted Appn.	FY 1991 Estimate	Inc. + or Dec.(-) from Enacted	Perm. Employ. 12/31/89
Legal Services						
Salaries and Expenses	$	25,325	25,305	26,485	+1,160	
	(FTE-T)	(363)	(355)	(359)	+4	(327)
TOTAL	$	25,325	26,305	26,485	+1,160	
	(FTE-T)	(363)	(355)	(359)	+4	(327)

The Solicitor's Office proposes $26,485,000 and 359 FTEs for fiscal year 1991. This represents a base increase of $1,160,000 and 4 FTEs from the FY 1990 enacted level.

The Solicitor's Office FY 1990 Appropriation has been adjusted from $25,325,000 to 25,305,000 as required by the Balanced Budget and Emergency Deficit Control Reaffirmation Act; a difference of $20,000. Since the reduction applies to FY 1990 only, a base adjustment of +$20,000 is proposed for FY 1991 to allow a more comparable basis for showing program changes from FY 1990. In addition to this adjustment, our FY 1991 proposal includes the following base adjustments: $74,000 for one more paid day in FY 1991 than in FY 1990; $116,000 for the increase in estimated retirement costs; $39,000 for increased payments to the Federal Employees Compensation Fund; $660,000 and 4 FTEs for full-year costs of the 1990 pay raise; $208,000 for the additional amount in 1991 to cover 40 percent of three quarter's cost of the estimated 1991 pay raise; $233,000 for increased rental payments to the General Services Administration; $25,000 for increased usage of WESTLAW; $12,000 for the estimated increase for printing and reproduction; $10,000 for the estimated increase for postage; $35,000 for partial restoration of training funds; and $4,000 for costs assigned to the Office for the Department's Drug Free Workplace Program. Reductions include $105,000 for decreased costs assigned to the Office for administrative services provided on a Department-wide basis; $5,000 for decreased unemployment and severance pay benefits to former personnel; $73,000 for decrease spending resulting from administrative efficiency; and $73,000 for savings due to staffing efficiency.

Highlights of 1991 Request

During FY 1991, the Solicitor's Office will provide legal services to aid in meeting the objectives of the Secretary and the Department's bureaus and offices in the following areas:

In support of the Secretary's plan to identify and deal with hazardous materials problems on all public lands, the Solicitor's Office will provide legal services concerning the clients' implementation of, and compliance with, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) as well as other environmental statutes. These legal services will relate to: (1) cleanup of hazardous wastes on Interior-managed lands; (2) compensation, through litigation or otherwise, from parties responsible for hazardous wastes on Interior-managed lands; and (3) minimizing inadvertent liability for hazardous wastes through land transactions.

As part of the Department of the Interior's concerted effort to protect wetlands, the Office will coordinate with the Department of Agriculture the implementation of the upland and wetland conservation provisions of the 1985 Food Security Act, and other programs for preservation of wetlands. Alaska issues, including subsistence hunting, oil and gas exploration, transportation easements, wildlife conservation, and native selections will require legal counsel. The Office's counsel in Endangered Species Act Section 7 consultations is anticipated.

The Office will assist the FWS and NPS in activities relating to the assessment of natural resource damages and their restoration in Alaska following the Exxon Valdez tanker accident. The Secretary of the Interior is one of three federal trustees injured by the Valdez accident. Shortly after the accident on March 24, 1989, Interior, along with the other federal trustees (Commerce and Agriculture) and the State of Alaska commenced the assessment of injuries. While the draft assessment plan issued by the Trustee Council in Alaska only addressed first year studies, it was recognized that additional studies might be necessary in subsequent years to determine fully the extent of injury to the fish, wildlife and land resources managed by Interior. These studies are important in developing effective restoration plans for the Prince William Sound and Western

Gulf of Alaska area, and for use by the Government in any litigation brought against Exxon to recover money damages caused by the injury, including the cost of assessment. The Office continues to provide counsel to the Department as the assessment is conducted and continues to coordinate with the Department of Justice on any claims brought against Exxon.

The Office will also provide legal counsel in support of protection of the national parks, including advice on wildlife, water, air quality and mineral development. Historic preservation advice will include rehabilitation tax credits, the Archeological Resource Protection Act, and coordination with the Advisory Council on Historic Preservation. The Office provides law enforcement advice on issues including First Amendment activities, endangered species importation and hunting.

The Office will continue to provide litigation and counseling support to the Office of Surface Mining (OSM). Extensive support will be provided to OSM in its implementation of the settlement agreement expected in the SOCM v. Lujan case involving OSM's Applicant/Violator System. Litigation support will include representation of the Department in suits against the Department arising under the Surface Mining Control and Reclamation Act (SMCRA); petitions for administrative review of agency enforcement actions; alternative enforcement actions to compel operators and their principals to correct violations of SMCRA which have resulted in failure-to-abate cessation orders; collection actions for civil penalties and individual civil penalties arising under Title V of SMCRA; and collection actions for unpaid Abandoned Mine Land (AML) fees arising under Title IV of SMCRA. Legal counsel support will include assistance to OSM in its development and revision of permanent program standards to regulate the environmental effects of surface coal mining; its review of the Title V regulatory programs in states with operational programs; its review of various state proposals to amend their approved programs; its administration of federal regulatory programs; and its implementation of the AML program pursuant to federal, state, and tribal reclamation plans.

The Office will provide advice concerning the five-year OCS oil and gas leasing schedule. The Office will review for compliance with the National Environmental Policy Act, OCS Lands Act, the Coastal Zone Management Act, and the Endangered Species Act all proposed actions involving the OCS lease sales. Consideration and implementation of the comprehensive new oil and gas, and coal product valuation regulations will require defense of challenges to these new requirements. The Office will continue to assist in defense of legal rationales in both industry-wide areas of royalty dispute as well as issues in untested areas before both the Department's Office of Hearing and Appeals and federal courts at all levels. The Office will assist the Department in meeting its enforcement objectives for cases of late, under, or non-payment of royalties; and advise and defend the Minerals Management Service when it audits lease accounts to assure that proper royalty has been paid.

The Office will provide legal assistance to the Bureau of Land Management (BLM) in its implementation of the new Automated Land Management Records System. In addition, the Office will provide legal advice and assistance to BLM in complying with the Resource Conservation and Recovery Act and with other laws dealing with hazardous substances, pollutants and contaminants. The Office also will review withdrawals pursuant to the Federal Land Policy and Management Act, and assist the BLM in its full range of activities by providing legal guidance as issues arise.

The Office will provide legal assistance to the Bureau of Indian Affairs (BIA) with respect to water rights adjudications, education and social services initiatives, reform of Indian trust fund management, rights-of-way and mineral development activities, Mitchell II type actions by Indians, review of gaming activities and management contracts, and tribal tax ordinances, new requirements under recent amendments to the Indian Self-Determination Act, including provision of federal liability insurance for tribal employees, as well as any necessary legal services incident to Superfund issues involving Indian lands. The Office will continue to meet the need for advice to the Secretary and BIA in the increasingly complex legal issues involved in Indian Affairs.

The Office will assist the Bureau of Reclamation in working closely with state, local and private entities to respond to the challenges of the new federal/state/local partnerships. Legal assistance will be provided in implementing the rules and regulations promulgated under the Reclamation Reform Act (RRA). The Office will continue to provide legal support for development of hydropower potential at Bureau facilities. In addition, legal assistance will be offered in connection with contract renewals for irrigation water in California and in relation to contracting of uncommitted water in the Central Valley Project. Further, the Office will provide a full range of legal services to the Bureau to assist it in accomplishing its mission.

The Office will provide legal service concerning adjustment, modification, and implementation of new land protection and acquisition strategies. The Office will continue to play an important role in the Department's land exchange initiatives. In addition, the Office will provide legal advice regarding regulatory revisions, implementation of the Clean Air Act, and reserved water rights.

The Office will continue to assist in implementation of the Compacts of Free Association with the Federated States of Micronesia and the Republic of the Marshall Islands, and with the Republic of Palau upon institution of its Compact, and in implementation of other agreements with the former Trust Territory of the Pacific Islands. In addition, some workload is anticipated in implementing the Program Fraud Civil Remedies Act. The Office will continue providing legal support and advice to the bureaus and offices as they carry out their increased drug enforcement efforts and responsibilities. Finally, the Office anticipates providing advice on implementation of the Drug-free Workplace Program. This will include assistance to the Department of Justice in lawsuits as well as advising management on legal aspects of management of the program.

DEPARTMENT OF THE INTERIOR

OFFICE OF THE SOLICITOR

SALARIES AND EXPENSES

For necessary expenses of the Office of the Solicitor, [$25,325,000,.] $26,485,00

Department of the Interior and Related Agencies Appropriations Act, 1990, as included in Public Law 101-121)

Appropriation Language Citation

Appropriation: Salaries and Expenses

Appropriation language and citations:

1. For necessary expenses of the Office of the Solicitor.

43 U.S.C. 1455

43 U.S.C. 1455 provides that on and after June 26, 1946, the legal work of the Department of the Interior shall be performed under the supervision and direction of the Solicitor of the Department of the Interior, who shall be appointed by the President with the advice and consent of the Senate.

Justification of Base Adjustments

	FTE	Amount
Adjustment for 1990 Effect of P.L. 100-119	--	+20

The Balanced Budget and Emergency Deficit Control Reaffirmation Act (P.L. 100-119) required a reduction in non-exempt programs in FY 1990. Since the reduction applies to FY 1990 only, this adjustment is made to allow a more comparable basis for showing program changes from FY 1990 to FY 1991.

Adjustment for Administrative Efficiency	--	-73

The Department is proposing to decrease spending for consultants, travel, overtime, supplies, and equipment by about 5 percent to improve administrative efficiency and place greater priority on 1990 program initiatives. Specific reductions are proposed in the following areas:

Travel	-30
Supplies	-16
Equipment	-27
Total	-73

Adjustment for Staffing Efficiency	--	-73

Savings are proposed from a planned reduction in the average grade achieved by filling vacant positions at an average of one grade lower than previously filled and from taking into account an expected additional lapse of 30 days before filling positions that become vacant in 1991. Specific reductions follow:

Average Grade	-32
Lapse	-41
Total	-73

Additional cost in 1991 of the 1991 pay raise	--	+208

The adjustment is for the additional amount needed in 1991 to cover 40 percent of the additional three quarter's cost of the estimated 3.5 percent pay raise effective in January 1991. The 1991 cost of the remaining 60 percent will be absorbed in FY 1991.

Adjustment for 1990 pay raise (full-year costs).............	+4	+660

Total cost in 1990 of pay increase.......................	$466
Adjustment for full-year 1991 cost of 1990 pay increase..	+194
Total adjustment for 1990 pay increase................	$660

The adjustment is for the 3.6 percent Federal pay raise effective January 1990. The total 1990 cost of $466,000 was fully absorbed in 1990 and resulted in a decrease of 8 FTE's. An additional $194,000 is required in 1991 to cover the full-year cost of the 1990 pay raise. During FY 1991, 4 additional FTEs will be used because of funding of full-year costs of the 1990 pay raise.

Workers Compensation payments..............................	--	+39

The adjustment is for increased costs for compensation to injured employees to be paid to the Department of Labor, Federal Employees Compensation Fund, pursuant to 5 U.S.C. 8147(b) as amended by Public Law 94-273.

Unemployment Compensation payments..........................	--	-5

The adjustment is for decreased costs of unemployment compensation claims to be paid to the Department of Labor, Federal Employees Compensation Account, in the Unemployment Trust Fund, pursuant to Public Law 96-499.

Rental payments to GSA......................................	--	+233

The adjustment is for increased costs payable to GSA resulting from higher rates for office and non-office space.

Departmental Working Capital Fund...........................	--	-105

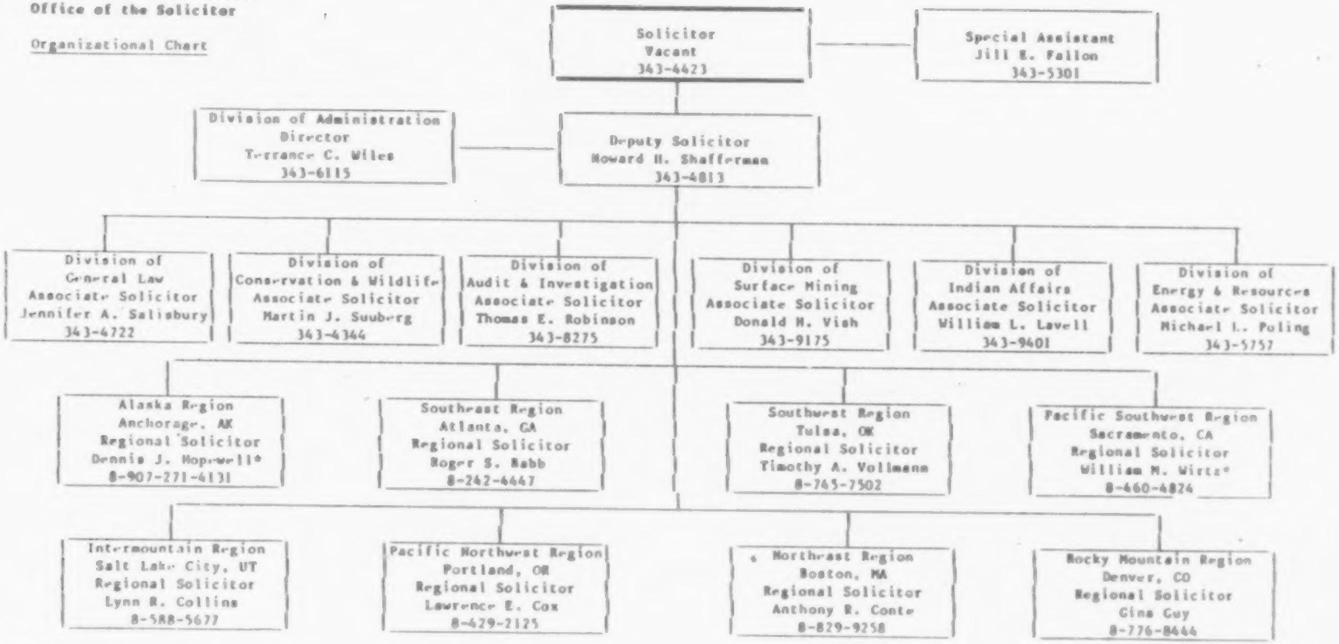
The adjustment is for decreased costs assigned to the Office for administrative services provided on a Department-wide basis. In FY 1991, costs for the Washington Interagency Telecommunications System (WITS), the GSA-provided computerized telephone system for the Interior Complex and the Department's in-house data interface/transport system, will decrease. Major acquisition and start-up costs for WITS will occur in FY 1990, with reduced costs in 1991 related primarily to maintenance. This reduction will be partially offset by adjustments for safety management and printing.

CSRS/FERS Retirement Costs..................................	--	+116

The adjustment is for the increase in estimated retirement costs resulting from the continuing growth in the relative proportion of FERS employees in the Office work force.

DEPARTMENT OF THE INTERIOR
Office of the Solicitor

Organizational Chart



Solicitor
Vacant
343-4423
Special Assistant
Jill E. Fallon
343-5301
Division of Administration
Director
Terrance C. Wiles
343-6115
Deputy Solicitor
Howard H. Shafferman
343-4813
Division of
General Law
Associate Solicitor
Jennifer A. Salisbury
343-4722
Division of
Conservation & Wildlife
Associate Solicitor
Martin J. Suuberg
343-4344
Division of
Audit & Investigation
Associate Solicitor
Thomas E. Robinson
343-8275
Division of
Surface Mining
Associate Solicitor
Donald H. Vish
343-9175
Division of
Indian Affairs
Associate Solicitor
William L. Lavell
343-9401
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Energy & Resources
Associate Solicitor
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Regional Solicitor
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Southwest Region
Tulsa, OK
Regional Solicitor
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Salt Lake City, UT
Regional Solicitor
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Portland, OR
Regional Solicitor
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Northeast Region
Boston, MA
Regional Solicitor
Anthony R. Conte
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Rocky Mountain Region
Denver, CO
Regional Solicitor
Gina Guy
8-776-8444

* Acting

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR

Summary of Requirements

(Dollar Amounts in Thousands)

Appropriation: Salaries and Expenses:	FTE	Amount	FTE	Amount
Appropriation enacted, 1990...........................			355	25,325
Reduction pursuant to P.L. 99-177....................				-20
Adjusted Approppriation, 1990.........................			355	25,305
Base Adjustments:				
1990 Impact of P.L. 99-177.........................	--	+20		
Administrative Efficiency..........................	--	-73		
Staffing Efficiency................................	--	-73		
Additional Cost in 1991 of the 1991 Pay Raise.......	--	+208		
Full-Year Cost in 1991 of the 1990 Pay Raise........	+4	+660		
Workers Compensation Payments......................	--	+39		
Unemployment Compensation Payments..................	--	-5		
Rental Payments to GSA.............................	--	+233		
CSRS/FERS Retirement Costs.........................	--	+116		
Departmental Working Capital Fund..................	--	-105		
One More Paid Day in FY 1991.......................	--	+74		
Drug Free Workplace Costs..........................	--	+4		
Other increases	--	+82		
Total, Adjustments to Base..........................	+4	+1,180	+4	+1,180
1991 Base Budget....................................			359	26,485
Program Changes.....................................			--	--
Total Requirements (1991 Estimate)..................			359	26,485

Summary of Requirements

(Dollar Amounts in Thousands)

Comparison by	1989 Actual		1990 Enacted to Date		PL 99-177 Reduction	1990 Adjusted Approp	1991 Base		1991 Estimate		Inc(+)/Dec(-) from 1990 Appropriation		Inc(+)/Dec(-) from 1990 Adjusted Approp	Inc(+)/Dec(-) from 1991 Base	
activity/subactivity	FTE-T	Amount	FTE-T	Amount	Amount	Amount	FTE-T	Amount	FTE-T	Amount	FTE-T	Amount	Amount	FTE-T	Amount
Legal Services	331	20,975	325	21,448	-17	21,431	329	22,514	329	22,514	+4	+1,066	+1,083	--	--
General Administration	28	3,711	30	3,877	-3	3,874	30	3,971	30	3,971	+0	+94	+97	--	--
TOTAL REQUIREMENTS	359	24,686	355	25,325	-20	25,305	359	26,485	359	26,485	+4	+1,160	+1,180	--	--

One More Paid Day in FY 1991.................................... -- +74

The increase in personnel compensation results from there being one more paid day in FY 1991 than in FY 1990.

Departmental Drug-Free Workplace.............................. -- +4

The adjustment is for increased costs of fostering a drug free workplace.

Other base adjustments:

WESTLAW.. -- +25

The increase in WESTLAW costs results from the increased use of WESTLAW which is the computer-assisted legal research service of West Publishing Company.

Printing and Reproduction.................................... -- +12

The net increase is an adjustment for estimated costs based on actual experience for use of the departmental copy centers (+22), the departmental printing plant (+20), and other printing services (-30).

Postage.. -- +10

The adjustment is for estimated costs incurred by the Office based on actual experience during FY 1990.

Training... -- +35

The adjustment is to restore training of employees to previous levels.

The allocation of the Solicitor's appropriation is shown below.

(dollar amounts in thousands)		FY 1990 Adjusted Approp.	FY 1991 Base	FY 1991 Estimate	Inc.(+) Dec. (-) from 1990	Inc.(+) Dec. (-) from Base
General Administration	$	3,874	3,971	3,971	+ 97	--
	FTE-T	30	30	30	--	--
Conservation and Wildlife	$	1,385	1,497	1,497	+112	--
	FTE-T	21	22	22	+1	--
Energy and Resources	$	2,374	2,533	2,533	+159	--
	FTE-T	36	37	37	+ 1	--
General Law	$	2,044	2,187	2,187	+143	--
	FTE-T	31	32	32	+ 1	--
Indian Affairs	$	1,517	1,590	1,590	+73	--
	FTE-T	23	23	23		--
Surface Mining	$	4,418	4,600	4,600	+182	--
	FTE-T	67	67	67		--
Audit and Investigation	$	132	138	138	+ 6	--
	FTE-T	2	2	2	--	--
Alaska	$	725	753	753	+ 28	--
	FTE-T	11	11	11	--	--
Southeast	$	593	616	616	+ 23	--
	FTE-T	9	9	9	--	--
Northeast	$	528	548	548	+ 20	--
	FTE-T	8	8	8	--	--
Rocky Mountain	$	1,187	1,232	1,232	+ 45	--
	FTE-T	18	18	18	--	--
Pacific Northwest	$	2,242	2,373	2,373	+131	--
	FTE-T	34	35	35	+1	--
Pacific Southwest	$	1,121	1,163	1,163	+ 42	--
	FTE-T	17	17	17	--	--
Intermountain	$	1,319	1,368	1,368	+ 49	--
	FTE-T	20	20	20		--
Southwest	$	1,846	1,916	1,916	+ 70	--
	FTE-T	28	28	28		--
Total	$	25,305	26,485	26,485	+1,180	--
	FTE-T	355	359	359	+4	--

Justification of Program and Performance

Activity: Legal Services

(dollar amounts in thousands)

		1990 Enacted to date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc.(+) Dec.(-) from Base
Legal Services	$	21,448	21,431	22,514	22,514	--
	(FTE)	(325)	(325)	(329)	(329)	--

Impact of Public Law 99-177

	1990 Enacted to date	P.L. 99-177 B.A. Cancellation	1990 Adjusted Approp.
Legal Services	21,448	-17	21,431

An adjustment will be made for funds allocated for incentive awards in order to make this reduction.

AUTHORIZATION

43 U.S.C. 1455: "The legal work of the Department of the Interior shall be performed under the supervision and direction of the Solicitor of the Department of the Interior, who shall be appointed by the President with the advice and consent of the Senate."

OBJECTIVES

The Interior Department's legal functions are carried out by attorneys in the Solicitor's Office. As questions arise concerning the legality of implementing a natural resource program or reviewing documents for legal sufficiency, attorneys are called upon to offer legal service. Attorneys assist the bureaus and agencies within the Department, as well as the Secretary, Under Secretary, and Assistant Secretaries, by reviewing programs and projects to assure that all legal requirements have been met and the course of action taken is consistent with effective law and regulations. In addition, Solicitor's Office attorneys assist Department of Justice attorneys in judicial litigation regarding cases involving the Interior Department. Attorneys within the Solicitor's Division of Surface Mining litigate collection and enforcement cases under the Surface Mining Control and Reclamation Act of 1977 as Special Assistant United States attorneys.

BASE PROGRAM

Organizational Structure

The Solicitor's Office consists of a headquarters organization at Washington, D.C., and regional and field offices located at nineteen locations throughout the United States. The Solicitor is the chief attorney for the Interior Department. As such, he is the principal legal advisor to the Secretary. The Solicitor directs the Department's skilled legal staff and is responsible for the legal work provided to the Department.

The Washington, D.C., office is organized into six major legal divisions and an administrative division, as described below. Each division is headed by an Associate Solicitor who is directly responsible to the Solicitor. Attorneys, under the supervision of Assistant Solicitors, render legal service for the Department's programs.

The field organization of the Solicitor's Office is divided into eight regions, as described below. Each region is headed by a Regional Solicitor who is directly responsible to the Deputy Solicitor and the Solicitor. In FY 1989, the Charleston, West Virginia, Special Collections Unit, was closed, and the functions and positions were reassigned to the Field Solicitor's Office in Pittsburgh, Pennsylvania. A new field office was created in Denver, Colorado, to handle the Surface Mining matters previously assigned to a unit within the Rocky Mountain Regional Office.

Headquarters

Division of Audit and Investigation
Division of Conservation and Wildlife
Division of Energy and Resources
Division of General Law
Division of Indian Affairs
Division of Surface Mining*
Division of Administration

Regions	Regional Offices	Field Offices
Alaska	Anchorage, Alaska	....
Southeast	Atlanta, Georgia	....
Northeast	Newton Corner, Massachusetts	....
Intermountain	Salt Lake City, Utah	Phoenix, Arizona Boise, Idaho

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* The field offices in Knoxville, Tennessee; Pittsburgh, Pennsylvania; and Denver, Colorado, are organizationally part of the Division of Surface Mining.

Regions	Regional Offices	Field Offices
Rocky Mountain	Denver, Colorado	----
Pacific Northwest	Portland, Oregon	Twin Cities, Minnesota Billings, Montana
Pacific Southwest	Sacramento, California	San Francisco, California
Southwest	Tulsa, Oklahoma	Window Rock, Arizona Santa Fe, New Mexico Pawhuska, Oklahoma

The Solicitor's Office is a legal service organization; the principal agencies served by its divisions and regional offices are shown below. The divisions are comprised of branches in support of Interior's programs.

Divisions	Branches	Principal Agencies Served
Audit & Investigation	---	Office of Inspector General
Conservation & Wildlife	Fish and Wildlife National Capital Parks Parks and Recreation	Office of the Secretary Assistant Secretary for Fish Wildlife and Parks National Park Service National Capital Region Fish and Wildlife Service Assistant Secretary-Policy, Budget and Administration
Energy & Resources	Land Use and Realty Offshore Minerals and Royalty Management Onshore Minerals Water and Power	Office of the Secretary Assistant Secretary-Land and Minerals Management Assistant Secretary-Water and Science Bureau of Land Management Bureau of Reclamation Minerals Management Service
General Law	Administrative Law & General Legal Services Equal Opportunity Compliance and Labor Law Procurement and Patents	Office of the Secretary Office of the Solicitor Department of the Interior generally (including all of the bureaus and offices thereof) Assistant Secretary-Policy Budget and Administration Assistant Secretary-Territorial and International Affairs Office for Equal Opportunity

Divisions	Branches	Principal Agencies Served
General Law (cont'd)		Bureau of Mines Geological Survey
Indian Affairs	General Indian Legal Activities Lands and Minerals Tribal Government and Alaska Water and Power	Office of the Secretary Assistant Secretary for Indian Affairs Bureau of Indian Affairs
Surface Mining	Litigation Regulatory Programs Enforcement & Collections	Office of the Secretary Assistant Secretary-Land and Minerals Management Office of Surface Mining Reclamation and Enforcement
	Field Offices:	
	Knoxville, Tennessee Pittsburgh, Pennsylvania Denver, Colorado	Office of Surface Mining Reclamation & Enforcement

Regions	Principal Agencies Served
Alaska	Bureau of Land Management, State Office, Anchorage, Alaska Bureau of Indian Affairs, Area Office, Juneau, Alaska National Park Service, Regional Office, Anchorage, Alaska U.S. Fish and Wildlife Service, Regional Office, Anchorage, Alaska Geological Survey, Alaska Office, Anchorage, Alaska Offices of Aircraft Services, Regional Office, Anchorage, Alaska Minerals Management Service, Alaska Office, Anchorage, Alaska
Southeast	Bureau of Indian Affairs, Eastern Area Office, Washington, D.C. Covering the Southeast and Northeast Regions Bureau of Indian Affairs, Seminole Agency, Hollywood, Florida Bureau of Indian Affairs, Choctaw Agency, Philadelphia, Mississippi Bureau of Land Management, Field Office, Jackson, Mississippi Geological Survey, Atlanta Office, Atlanta, Georgia and District Offices throughout the Southeast Region Geological Survey, Eastern States Office, Washington, D.C. U.S. Fish and Wildlife Service, Southeast Regional Office, Atlanta, Georgia plus work in Louisiana and Arkansas National Park Service, Southeast Region, Atlanta, Georgia Office of Surface Mining, Knoxville, Tennessee Bureau of Mines, Research Center, Tuscaloosa, Alabama

Regions	Principal Agencies Served
Northeast	Bureau of Mines, Pittsburgh/Bruceton Operations Office and Research Center, Pennsylvania Bureau of Mines, Branch of Procurement, Bruceton, Pennsylvania Geological Survey, The National Center, Reston, Virginia and Water Resource Division, District Offices throughout the Northeast Region U.S. Fish and Wildlife Service, Regional Office, Region Five, Newton Corner, Massachusetts Patuxent Wildlife Research Center, Laurel, Maryland National Park Service, Mid-Atlantic Region, Philadelphia, Pennsylvania National Park Service, North Atlantic Regional Office, Boston, Massachusetts Lowell Historic Preservation Commission, Lowell, Massachusetts Appalachian Trail, Project Office, Martinsburg, West Virginia Office of Surface Mining, Eastern Technical Center, and Field Offices, Pittsburgh, Pennsylvania
Rocky Mountain	Bureau of Land Management, Denver Service Center, Denver, Colorado Bureau of Land Management, Colorado State Office, Denver, Colorado Bureau of Land Management, Wyoming State Office, Cheyenne, Wyoming Bureau of Mines, Research Center, Denver, Colorado Bureau of Reclamation, Engineering & Research Center, Denver, Colorado Bureau of Reclamation Headquarters, Denver, Colorado Minerals Management Service, Royalty Management Program Headquarters, Denver, Colorado National Park Service, Denver Service Center, Denver, Colorado National Park Service, Rocky Mountain Regional Office, Denver, Colorado National Park Service, Midwest Regional Office, Omaha, Nebraska Geological Survey, Central Regional Office, Denver, Colorado U.S. Fish and Wildlife Service, Regional Office, Region 6, Denver, Colorado Office of the Secretary, Denver, Colorado Office of Inspector General, Central Region, Denver, Colorado Office of Surface Mining Reclamation and Enforcement, Field Office, Casper, Wyoming Office of Surface Mining Reclamation and Enforcement, Field Office, Albuquerque, New Mexico Office of Surface Mining Reclamation and Enforcement, Field Office, Kansas City, Kansas Office of Surface Mining Reclamation and Enforcement, Field Office, Tulsa, Oklahoma Office of Surface Mining, Western Field Operations Office, Denver, Colorado Office of Environmental Project Review, Region Environmental Officer, Denver, Colorado and Chicago, Illinois

Regions	Principal Agencies Served
Pacific Southwest	Bureau of Indian Affairs, Area Office, Sacramento, California
	Bureau of Reclamation, Mid-Pacific Region, Sacramento, California
	Bureau of Land Management, State Office, Sacramento, California
	Bureau of Land Management, State Office, Reno, Nevada
	National Park Service, Western Regional Office, San Francisco, California
	Office of Environmental Project Review, Region Nine, San Francisco, California
	Geological Survey, Western Regional Office, Menlo Park, California
	U.S. Fish and Wildlife Service, Regional Office, Region One, Portland, Oregon
	Minerals Management Service, Pacific OCS Region, Los Angeles, California
	Minerals Management Service, International Programs and Critical/Strategic Minerals, Los Angeles, California
	Office of the Inspector General, Western Region
Intermountain	Bureau of Indian Affairs, Area Office, Phoenix, Arizona
	Bureau of Land Management, State Office, Boise, Idaho
	Bureau of Land Management, State Office, Phoenix, Arizona
	Bureau of Land Management, State Office, Salt Lake City, Utah
	Bureau of Mines, Salt Lake City, Utah
	Bureau of Reclamation, Pacific Northwest Region, Boise, Idaho
	Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada
	Bureau of Reclamation, Upper Colorado Region, Salt Lake City, Utah
	National Park Service, Regional Office, Denver, Colorado
	Geological Survey, Idaho State Office, Boise, Idaho
	Geological Survey, District Office, Salt Lake City, Utah
	U.S. Fish and Wildlife Service, Area Office, Salt Lake City, Utah
	Office of Aircraft Services, National Headquarters, Boise, Idaho
	Boise Interagency Fire Center, Boise, Idaho
Pacific Northwest	Bureau of Indian Affairs, Area Office, Minneapolis, Minnesota
	Bureau of Indian Affairs, Area Office, Billings, Montana
	Bureau of Indian Affairs, Area Office, Aberdeen, South Dakota
	Bureau of Indian Affairs, Area Office, Portland, Oregon
	Bureau of Land Management, Montana State Office, Billings, Montana
	Bureau of Land Management, Oregon State Office, Portland, Oregon
	Bureau of Mines, Research Center, Minneapolis, Minnesota
	Bureau of Mines, Western Field Operations Center, Spokane, Washington
	Bureau of Mines, Albany Research Center, Albany, Oregon

Regions	Principal Agencies Served
Pacific Northwest (cont'd)	Bureau of Reclamation, Great Plains Region, Billings, Montana
	National Park Service, Pacific Northwest Region, Seattle, Washington
	Geological Survey, District Office, Tacoma, Washington
	Geological Survey, Central Regional Office, Bismarck, North Dakota
	Geological Survey, District Office, Helena, Montana
	U.S. Fish and Wildlife Service, Region One, Portland, Oregon
	U.S. Fish and Wildlife Service, Region Three, Minneapolis, Minnesota
	Geological Survey, District Office, Indianapolis, Indiana
	Geological Survey, District Office, St. Paul, Minnesota
	Office of Environmental Review, Regional Environmental Office, Chicago, Illinois
	Office of Environmental Review, Regional Environmental Office, Portland, Oregon
Southwest	Bureau of Indian Affairs, Area Office, Window Rock, Arizona
	Bureau of Indian Affairs, Central Office Divisions, Albuquerque, New Mexico
	Bureau of Indian Affairs, Area Office, Albuquerque, New Mexico
	Bureau of Indian Affairs, Area Office, Anadarko, Oklahoma
	Bureau of Indian Affairs, Area Office, Muskogee, Oklahoma
	Bureau of Indian Affairs, Osage Agency, Pawhuska, Oklahoma
	Bureau of Land Management, State Office, Santa Fe, New Mexico
	Bureau of Mines, Office of Helium Operations, Amarillo, Texas
	Geological Survey, District Offices, Amarillo and Austin, Texas, and Oklahoma City, Oklahoma
	U.S. Fish and Wildlife Service, Regional Office, Region Two, Albuquerque, New Mexico
	National Park Service, Regional Office, Santa Fe, New Mexico
	Minerals Management Service, Regional Office, Metairie, Louisiana
	Office of Environmental Project Review, Regional Office, Albuquerque, New Mexico

Program Description

The following program description provides a general overview of the major legal issues and questions within the Interior Department. It is organized by principal clients served and identifies the base legal services provided each client as well as furnishing a description of the major legal projects completed, initiated, and anticipated in fiscal years 1989, 1990 and 1991.

Base legal activities describe the services that the Solicitor routinely provides to bureaus and offices and includes such activities as providing advice and legal opinions on specific programs, legislation or rules and regulations, and defending litigation. When a Departmental bureau or office alters the direction or level of a program, special nonrecurring legal projects emerge, many of which require a substantial amount of staff time to resolve. During the year, the Solicitor's attorneys are assigned base activities to perform in addition to several major legal projects. Combining the base activities with the major projects yields the overall legal agenda that confronts the Interior Department and, thus, the Solicitor.

The Solicitor provides legal services to the Secretary, Under Secretary, and Assistant Secretaries. The Solicitor's Office will provide legal support for a wide array of activities including the various programs leading to Indian self-determination, programs focusing on the conservation, restoration, and development of the nation's natural resources, the assessment of damages to natural resources for which the Department acts as trustee, implementation of the Secretary's trust responsibility for Indian lands and natural resources, and the protection and management of wildlife.

FISH AND WILDLIFE SERVICE
Client

BASE ACTIVITIES:

The Fish and Wildlife Service (FWS) encounters legal problems involving the enforcement of federal wildlife statutes, management of the over 450 unit, ninety million acre National Wildlife Refuge System, application of international treaties, and land acquisition that arise from the following laws: National Wildlife Refuge System Administration Act, Alaska National Interest Lands Conservation Act (ANILCA), Endangered Species Act (ESA), seven international wildlife conservation treaties, the amended Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund), Pittman-Robertson and Dingell-Johnson Acts, Bald and Golden Eagle Protection Act, African Elephant Conservation Act, Migratory Bird Treaty Act, Migratory Bird Conservation Act, Migratory Bird Hunting and Conservation Stamp Act, Lacey Act, Marine Mammal Protection Act (MMPA), Coastal Barrier Resources Act, Clean Water Act, Clean Air Act, Wilderness Act, Alaska Native Claims Settlement Act (ANCSA), Emergency Wetlands Resource Act and Fish and Wildlife Coordination Act (FWCA), and encounters legal questions concerning general administrative law, personnel cases, tort claims, and procurement actions.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Endangered Species Act, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): The Office played a significant role in the development and initial application of a final rule that implements statutory changes to Section 7(b)(4) of the ESA, as amended. Further, the Office provided extensive legal advice on ESA issues for the FWS, reviewed several state programs for potential Section 6 cooperative agreements, and reviewed numerous separate rulemaking packages and accompanying documents connected with the listing and "experimental population" processes. The Office had also been involved in complex administrative and judicial proceedings involving ESA issues. For example, extensive attorney time was invested in: counseling the Service on the legal issues arising out of a petition to list the northern spotted owl under the ESA; litigation on the Service's biological opinion on the Bureau of Reclamation's operating criteria for the Newlands Project; section 7 issues involved in the renewal of water service contracts in California's Central Valley; section 7 issues involved in EPA's registration of certain pesticides; litigation regarding the international applicability of section 7; litigation on designation of critical habitat for the Concho water snake; litigation on the emergency listing of certain desert tortoise populations; litigation on observatory construction and the Mount Graham red squirrel; and, advising the Service on Section 7 consultation with EPA on pesticide registration under FIFRA. These activities are ongoing. Further legal advice was provided to the Service to assist it during the reauthorization process for the ESA and to assist the Service in the implementation of the 1988 Amendments. Additionally, this Office helped the Service prepare for the CITES Conference of the Parties held in Switzerland in October 1989. The Office has reviewed many Federal Register notices issued by the FWS to implement procedures or species listings under CITES. Lastly, this Office worked closely with FWS to prepare a Section 7 policy manual, and provided training to Service biologists at a Section 7 workshop held in Denver in June.

2. Arctic National Wildlife Refuge: The Arctic National Wildlife Refuge (ANWR) in northeastern Alaska continued to be the focus of considerable attention. The Office provided legal advice to FWS and the Department in connection with: the consideration by Congress of legislation to allow oil and gas exploration, development and production within the coastal plain; the Department's response to a GAO report on the Chandler Lake exchange; and, the preparation of the Record of Decision in support of the Secretary's recommendation that Congress ratify six new land exchange proposals benefitting refuges in Alaska as a part of the ANWR opening legislation.

3. Subsistence in Alaska -- Title VIII of ANILCA: Title VIII of ANILCA gives a preference to rural residents of Alaska over all others in hunting and fishing on the public lands. The Department determined in 1982 and again in 1988 that the State of Alaska's program for implementing the preference is consistent with ANILCA's requirements, thereby authorizing the State to manage the preference on public lands. The Office provided the Assistant Secretary, Fish and Wildlife and Parks, and the FWS with oral and written advice on the numerous legal issues involved in the federal review and oversight of the State subsistence program under ANILCA, including an October 1988 court order that calls into question the consistency of the State's program with ANILCA. This is an ongoing activity.

4. African Elephant Conservation: The Office has advised the FWS on implementation of the African Elephant Conservation Act, which was enacted in October 1988. The Act provides for the establishment of moratoria against ivory imports from countries that do not conserve African elephants or otherwise comply with the Act's criteria. The Office has, in particular, advised the FWS with respect to the June 9, 1989, moratorium on all ivory imports. The Office has also counseled the FWS on its handling of a petition to reclassify the African elephant under the Endangered Species Act from threatened to endangered. Legal issues with regard to the African Elephant Conservation Act will be ongoing.

5. Comprehensive Environmental Response, Compensation and Liability Act: CERCLA required the promulgation of regulations setting out procedures for conducting assessments to determine damages to natural resources from the release of hazardous substances or oil. These regulations, known as Types A and B, have been completed. Both were challenged by several states, environmental and industry groups. The Office assisted the Department of Justice in the defense of these regulations. In July 1989, the Court of Appeals for the District of Columbia Circuit invalidated portions of the regulations. This Office provided advice to the Department on the advance notice of intent to propose rulemaking to revise the regulations in conformance with the circuit court's directions. In addition, legal assistance was provided to the CERCLA team in its preparation and completion of the biennial review of the regulations. The Office also assisted the Department by participating in natural resource trustee training sessions concerning state and federal trustees and the regulations.

Legal advice to FWS was provided regarding negotiations over hazardous waste sites including Crab Orchard and the cleanup of other contaminant releases, such as the Exxon Valdez accident. This Office provided the Department's representative on the Legal Team providing advice to the natural resource damage assessment process as a result of the Exxon Valdez tanker accident.

The Office also worked with the Department of Justice and the Environmental Protection Agency, concerning covenants not to sue certain responsible parties for damages to natural resources for approximately 25 hazardous waste sites. The Solicitor's Hazardous Substance Task Force, upon which are three members of the Fish and Wildlife Branch, provided advice to the Service, including opinions concerning the Department of the Interior's potential liability and natural resource trustee responsibility under CERCLA.

6. National Wildlife Refuge Resource Protection Issues: Several resource protection issues were handled by the Office. One ongoing issue concerned the pollution of refuge lands by contaminated agricultural drain water. The pollution resulted in an Administrative Order from the California State Water Resources Board requiring the cleanup of Kesterson Reservoir and Refuge. The Office assisted the Service and the Department in the continued legal evaluation of the proceeding. Another concerned pollution of refuge lands by oil and gas development. This Office handled coordination of potential civil lawsuits with the Department of Justice.

7. Federal Wildlife Conservation Laws and Reserved Native American Hunting and Fishing Rights: The FWS continued to administer guidelines for establishing more flexible seasons and other management measures that govern the hunting of migratory birds on Indian reservations and ceded lands. The Office provided legal assistance to the FWS in evaluating tribal proposals under the guidelines. The Office reviewed Federal Register notices issued by the FWS for implementing tribal seasons.

8. Fish and Wildlife Coordination Act (FWCA): The Office provided legal assistance to the FWS arising out of its responsibilities under the FWCA. Due to the increased number of hydroelectric project study permits issued by the Federal Energy Regulatory Commission (FERC), as well as license expirations coupled with relicensing applications, there has been an increase in the number of requests for intervention in FERC proceedings. The passage of the Electric Consumers' Protection Act increased the weight to be given the FWS comments under the FWCA in the FERC licensing process.

9. Fish and Wildlife Law Enforcement: Legal assistance to FWS was provided in relation to the enforcement of federal fish and wildlife laws. The Office also assisted in several court appeals regarding enforcement procedures and reviewed requests for prosecution arising with regard to Native Americans.

10. National Wildlife Refuge System Hunting Programs: The Refuge Recreation Act and National Wildlife Refuge System Administration Act authorize the FWS to permit controlled sport hunting and trapping on refuges if certain criteria are met. The FWS currently permits such hunting on over 288 refuges. The Office previously defended a complex legal challenge brought against all refuge hunting programs which terminated successfully when plaintiffs stipulated to a dismissal of the complaint. The Office provided substantial legal assistance to the FWS as it prepared a new programmatic environmental impact statement on refuge management, and in connection with planned openings of new refuges and revision of refuge-specific regulations. In addition, the Office assisted the Department of Justice in blocking a legal challenge to a hunt on Supawna NWR.

11. ESA Habitat Conservation Plans and Incidental Take Permits: Section 10(a)(1)(B) of the Endangered Species Act authorizes the FWS to issue permits allowing the taking of endangered or threatened species incidental to development or other lawful activities, provided that the permit is supported by a plan for conserving the species and their habitats. The Office continued to represent the FWS in negotiations and review of documents with respect to several habitat conservation plans.

12. Marine Mammal Protection Act (MMPA): The Office provided litigation support to the Department of Justice on a legal challenge to the FWS regulations on authentic handicraft items. Advice was provided to FWS on the development of regulations to address issues in that court case. Oral advice was also provided to the Office of Management Authority on MMPA permit issues.

This Office provided extensive support in the preparation of the Service for the reauthorization of the MMPA and has assisted the Service in the implementation of the 1988 Amendments. One of the more significant amendments -- the 5-year commercial fishing exemption -- has required extensive work from this Office in providing advice to the Service on its responsibilities. This Office also provided advice to the Service on its authorities under the MMPA with respect to the impacts of the oil tanker accident in Prince William Sound on Alaska sea otters. This will be an ongoing activity. Lastly, the Office played a significant role in the development and publication of draft final regulations implementing statutory changes to Section 101(a)(5) of the MMPA, which provide for the limited incidental taking of marine mammals in the course of otherwise lawful activities other than commercial fishing.

13. Land Acquisition Policies: The Office provided oral and written legal advice in further developing and implementing land acquisition policies. This activity is part of the FWS initiative to develop more effective approaches and strategies to land acquisition, and required the Office to review policy statements, identify legal options, and assist the Department of Justice in condemnation actions. Legal advice was also provided concerning the Department policy concerning acquisition of lands that may contain hazardous substances.

14. Trademark and Copyright Laws: The Office provided legal assistance in the protection, use and licensing of service marks and trademarks as well as for other copyright issues.

15. Waterfowl Production Areas: The Office processed increased numbers of requests for litigation seeking specific performance of easement prohibitions against drainage or filling of wetlands preserved as waterfowl production areas. Several cases remain in litigation.

16. Wetland Conservation: The Office advised the FWS in coordinating with the Department of Agriculture (USDA) over the USDA's regulations and other actions to implement the wetland conservation provisions of the Food Security Act of 1985. These provisions (called "Swampbuster") render a person ineligible for any farm program benefits if he produces crops on wetland that has been drained or otherwise converted for purposes of crop production. In addition, the Office advised FWS with respect to Farmers Home Administration inventory lands and conservation easements for those lands consistent with the 1987 Agricultural Credit Act.

17. Migratory Bird Treaty Act: The Office has continued to advise the FWS in preparing Federal-State Native cooperative agreements and enforcement policies pertaining to subsistence hunting of migratory birds in Alaska. This hunting is governed by the conflicting provisions of several migratory bird treaties and statutes, as well as an October 1987 court order concerning subsistence hunting for waterfowl in the Yukon-Kuskokwin Delta.

18. Takings Executive Order: This Office prepared the Departmental guidelines for implementing Executive Order 12630 (Avoidance of Takings of Private Property). The Departmental guidelines were approved by the Attorney General on March 29, 1989. These guidelines contain a number of provisions to assist FWS to comply fully with the Order.

19. Federal Technology Transfer Act: The Office provided advice on implementation of this Act in accordance with Executive Order 12591.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Endangered Species Act (ESA) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): The Office will continue to provide oral and written legal advice on the implementation of the final Section 7 consultation regulations, as amended. A steady workload of regulatory documents connected with the ESA listing process is anticipated for review by the Office. With respect to CITES, the Office will assist the FWS in implementing resolutions adopted at the October 1989 Conference of the Parties. The Office will also be extensively involved in providing legal advice with regard to the implementation of the ESA Amendments of 1988. This Office will provide advice to the FWS as it conducts a section 7 consultation on the San Joaquin Basin Resource Management Initiative. The Office is currently defending a challenge to a biological opinion relating to the Mount Graham Red Squirrel and a major astronomical center. The efforts of EPA to bring its pesticide registration program into compliance with the ESA will also require extensive attorney time, as will the FWS's northern spotted owl and desert tortoise listing rulemakings and section 7 consultations.

2. Migratory Birds: The Office will also assist the FWS in implementing its programmatic environmental impact statement on the migratory bird program and in the implementation of the North American Waterfowl Plan. The Office will continue to assist the FWS with regard to the incidental taking of migratory birds by otherwise lawful activities.

3. Arctic National Wildlife Refuge (ANWR): The Office will continue to provide the FWS and the Department with legal advice and assistance concerning the administration of ANWR. Major emphasis will be placed on helping FWS and the Department to prepare testimony and respond to congressional inquiries on whatever legislation Congress has under consideration for opening ANWR to further oil and gas activities, as well as drafting regulations or taking other actions necessary to implement such legislation, if enacted. Questions may also arise over the resolution of Kaktovik Inupiat Corporation's underselections. In addition, this office is assisting the Department of Justice to defend two lawsuits challenging the legal sufficiency of the Secretary's ANILCA, Section 1002(h) report to Congress and its associated legislative Environmental Impact Statement.

4. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): The Office will continue to play a major role in implementation and revision of the natural resources damage assessment regulations required under CERCLA. The Office will provide extensive assistance to the Office of Environmental Affairs including assisting with briefings to states and other parties, and with revising the natural resources damage assessment regulations.

A major priority is continued assistance in the negotiation of cleanup agreements and the filing of claims against private parties who are liable for hazardous waste releases that affect FWS protected resources. The Office will provide specific guidance on how to prepare claims for damages for injury to trustee resources. For claims arising from releases from sites not listed on the National Priority List ("non-NPL sites"), action must be commenced by March 1990 in some situations. This Office will review approximately 30 requesg7ts from the Department of Justice and the Environmental Protection Agency to agree that covenants not to sue certain responsible parties for damages resulting from injury to natural resources are appropriate. Finally, CERCLA has been amended and reauthorized to include major new compliance requirements for the client agencies. These additional responsibilities arise where hazardous waste is situated on FWS managed lands and gives rise to "Federal facilities" responsibilities under CERCLA. This Office will also assist the FWS as it works toward the development of an MOU with EPA on ESA compliance for threatened clean-up actions that affect endangered and threatened species.

5. African Elephant Conservation: This Office will continue to advise the FWS on implementing the African Elephant Conservation Act. Particular issues include addressing the recent action under CITES to place the elephant on Appendix I and the effect of the Appendix I listing on trophy imports.

6. Exxon Valdez Oil Tanker Accident: This Office will provide extensive assistance to the Department, primarily the FWS, in assessing the damages for injury to trustee resources affected by the accident. Advice will be rendered on the Natural Resource Damage Assessment Regulations and assistance in coordination with other State and Federal trustees. Other legal bases for liability are also being considered.

7. Federal Wildlife Conservation Laws and Reserved Native American Hunting and Fishing Rights: The Office will continue to advise the FWS on the establishment and enforcement of experimental migratory bird hunting seasons and management programs on Indian reservations and ceded lands. The Office will provide legal advice to the FWS on the negotiation of memoranda of understanding with Indian tribes on migratory bird hunting.

8. National Wildlife Refuge Issues: The Office will continue to provide legal advice to the FWS on remedial actions for the cleaning, removal, and prevention of contamination, from agricultural drain water and other sources, of refuge resources. It is expected that litigation will continue to arise over certain refuges where the United States does not own the underlying oil and gas or mineral deposits. Legal advice and assistance will also be provided on the controlled sport hunting and trapping permitted on refuges, and the acquisition

of wetland easements. In addition, the Office will assist the FWS in issuing final regulations clarifying the scope and application of the general Wildlife Refuge System regulations to wetland easement areas within the System.

9. Predator Control on Refuges: Continued litigation is expected with regard to the use of poisonous substances for predator control purposes. FWS concerns with regard to the application of the Endangered Species Act, Migratory Bird Treaty Act, and Bald and Golden Eagle Protection Act to such activities will continue to involve the Office.

10. National Fish and Wildlife Foundation (NFWF): Pursuant to language in the Senate Report on the FY 1990 Interior and Related Agencies Appropriation Bill, the Office has been requested to provide legal services on an reimbursable basis to the Foundation. Accordingly, the Office of the Solicitor and the Foundation will discuss the future provision of legal services. The Office continues to provide limited legal service to the Service on issues related to NFWF matters upon specific written request from the FWS.

11. Law Enforcement Assistance: The Office will continue to provide legal advice to FWS and assistance to the Department of Justice in connection with a wide range of law enforcement matters. Of particular significance will be the need to assist in ongoing defenses to legal challenges to the importation of exotic wildlife, enforcement of that part of the Migratory Bird Treaty Act dealing with the commercialization of bird parts, and administrative inspection of permit holders' premises and termination of permits.

12. FERC Proceedings and Fish and Wildlife Coordination Act (FWCA): The Office will continue to advise the FWS concerning its responsibilities pursuant to the Fish and Wildlife Coordination Act. The Office will also review approximately 25 requests forwarded from the FWS regional offices to intervene in FERC proceedings during the fiscal year. Extensive oral and written legal advice, assistance in FERC proceedings and general litigation, will continue to be provided relating to preservation, restoration, and enhancement of anadromous fisheries nationwide as required by the Federal Power Act.

13. Marine Mammal Protection Act: The Office may be involved in rulemaking hearings if the FWS seeks a waiver of the taking moratorium or proposes other management initiatives. The Office would assist the FWS in the implementation of the 1988 Amendments, including continuing work on the 5-year commercial fishing exemption. This Office would also expect to advise the Service on any final rule that outlines appropriate handicraft uses of Alaskan sea otters.

14. Land Acquisition Policies: The Office will continue to assist in developing legal strategies for handling land acquisition cases. The Office will review all condemnation cases before transmittal to the Department of Justice, provide legal advice on options available, and provide legal advice on settling condemnation cases. Under recently enacted statutory authority, FWS will be seeking to cede some or all of its exclusive jurisdiction over its lands to the state in which the land is located. The Office expects to provide legal assistance to the Service to implement this authority. The Office will also continue to review all preliminary and final title opinions and provide legal advice in direct purchase/gift acquisitions.

15. Waterfowl Production Areas: The Office will continue to process an increased volume of requests for litigation to enforce the terms of waterfowl production area easements which prohibit the drainage or filling of protected wetlands.

16. Subsistence in Alaska -- Migratory Birds: The Office will counsel the FWS on compliance with the various treaties and statutes that govern subsistence hunting for migratory birds in Alaska. In addition, the Office will assist the FWS in developing and implementing a comprehensive strategy for managing subsistence hunting of migratory birds throughout Alaska. The Office will also continue to advise the Assistant Secretary and the FWS on issues relating to the subsistence protocol amendment to the U.S.-Canada migratory bird treaty should they arise.

17. Subsistence in Alaska -- Title VIII of ANILCA: The State of Alaska's program for implementing the Title VIII subsistence preference to rural residents of Alaska with regard to hunting and fishing on the public lands continues to be subject to legal challenges and has been called into serious question by a recent decision of the Alaska Supreme Court. The Office will continue to provide FWS with oral and written advice on the federal review and oversight of the state subsistence program under ANILCA.

18. North American Waterfowl Management Plan/North American Wetlands Conservation Act: This Office will assist the FWS in its various projects implementing the Plan, which is a joint endeavor of the Governments of Canada and the United States for the protection of North American waterfowl and their habitats. In addition, we will be assisting the Service in its efforts to carry out its statutory responsibilities under the recently enacted North American Wetlands Conservation Act and with regard to the "No Net Loss of Wetlands" goal of the Administration.

19. Loxahatchee National Wildlife Refuge: This Office is assisting the Department of Justice in bringing suit against the Florida Department of Environmental Resources and the South Florida Water Management District for the deterioration of water quality and waters flowing into the Loxahatchee National Wildlife Refuge in South Florida as a part of the overall suit to protect Everglades National Park.

20. Farmers Home Administration (FmHA) Conservation Easements on Inventory Lands: This Office will continue to assist FWS in its negotiations with FmHA on placing conservation easements on its inventory lands, and transferring environmentally sensitive properties to FWS.

21. Exxon Valdez FOIA Requests: In addition to this Office's role in the assessment and civil and criminal proceedings, the Office will be coordinating numerous FOIA requests that have already been, and will continue to be, received by the various Departmental offices with regard to the oil tanker accident.

22. Federal Technology Transfer Act: The Office continues to advise the FWS on implementation of the Act. In addition, the Office advises on questions about the rights to inventions made by non-profit organizations and small business firms under contract with the Service.

23. D'Arbonne NWR Mineral Development: In concert with the Department of Justice, it is anticipated that an approach to the protection of D'Arbonne NWR against private mineral activity will be agreed upon and initiated.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

The Office expects that as the number of CERCLA sites identified for cleanup continues to grow so will the number of inquiries from the Department of Justice regarding natural resource concerns. The Office will assist in affirmative litigation concerning injuries to natural resources in connection with non-NPL sites, which are not slated for Federally-led remediation. In addition, the Office expects a major continuing effort in negotiating cleanup agreements and seeking reimbursement from responsible parties for cleanup of hazardous wastes, including the cleanup and assessment in connection with the Exxon Valdez oil tanker accident, as well as protecting FWS from acquiring hazardous waste liability through land acquisitions. The Office will continue to work with the Fish and Wildlife Service and the Department of Justice in resolving these issues. It is also expected that the FWS will continue to require legal assistance concerning its involvement in monitoring groundwater contamination. The Office will also be involved in FWS's coordination with the Department of Agriculture over its implementation of the upland and wetland conservation provisions of the 1985 Food Security Act and the 1987 Agricultural Credit Act. The Department of the Interior's continued implementation of ANILCA will also be a major concern. Concerning ANILCA and other statutes relating to Alaska, the Office will continue to focus on issues relating to Alaska's subsistence program, oil and gas exploration, submerged lands, wilderness uses, and native underselections in conservation system units. An increased need for the Office's legal assistance in ESA Section 7 consultations is anticipated as the FWS's capability in this area is enhanced and additional species are listed. Moreover, the Office will continue to review numerous documents associated with the listing of endangered species, designation of critical habitat, and the establishment of experimental populations. Increased work is anticipated in legal issues pertaining to the protection and enhancement of the nation's anadromous fisheries. An increase in refuge-private landholder disputes may occur with the expansion of private development in these areas. This Office will continue to seek recovery for damage to refuges causes by unreasonable exploration and extraction of privately held oil/gas interests. In addition, the Office anticipates participating in the negotiations for future Habitat Conservation Plans under Section 10(a) of the Endangered Species Act and in the development of generic regulations for this area.

The Office will provide legal advice to the Assistant Secretary, Fish and Wildlife and Parks, and the FWS Directorate regarding: implementation of amendments to ANILCA and the Alaska Native Claims Settlement Act that affect conservation system units; implementation of amendments to the Endangered Species Act and the Marine Mammal Protection Act; the enforcement and delineation of wetland easements and implementation of the Clean Water Act's Section 404 program; the implementation and amendment of natural resource damage assessment regulations and the continued implementation of natural resource damage claims under Section 107 of CERCLA; federal facility responsibilities under section 120 of CERCLA; the cleanup of hazardous waste sites on wildlife refuges; access on wildlife refuges for the development of reserved and excepted mineral interests and the promulgation of guidelines governing exploration and development of such mineral interests on refuges; subsistence hunting of migratory birds in Alaska, including implementation of a negotiated Protocol Amendment to the Migratory Bird Treaty with Canada should it be completed; the possible drafting of Section 22(g) regulations under the Alaska Native Claims Settlement Act; and Indian hunting and fishing rights disputes. Finally, with increased attention to the use of Endangered Species for public, medical and scientific purposes and the additional attention to the permit requirements of the Migratory Bird Treaty Act, FWS permit activities will continue to require additional legal attention in fiscal year 1991; implementation of the North American Waterfowl Management Plan and wetlands related issues, including conservation easements on FmHA inventory lands will also require legal attention.

In addition, the Office will provide legal opinions to the Assistant Secretary and the FWS Directorate, review regulations for legal sufficiency, draft and negotiate agreements, review proposed legislation, represent the FWS in administrative proceedings, and defend the FWS in ongoing and new litigation.

The Office will continue to advise on issues arising under the Federal Technology Transfer Act and on questions of rights to inventions by small business and non-profit contractors.

NATIONAL PARK SERVICE
(including National Capital Region)
Client

BASE ACTIVITIES:

The National Park Service (NPS) routinely faces legal questions concerning archaeology and historic preservation, water rights, law enforcement, the Freedom of Information Act, park concessions, the Alaska Native Claims Settlement Act, the Alaska National Interest Lands Conservation Act, land acquisition, Land and Water Conservation and National Historic Preservation Program, the Clean Air Act, general administrative law, personnel cases, tort claims, procurement actions, Superfund, and Coastal Zone Management Act and other legislation relating to conservation and wildlife.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Regulations: The Office played a major role in assisting the Department of Justice in drafting briefs and other court papers necessary to defend litigation on regulations regarding public use of the National Park System, as authorized by Congress in the legislation establishing these areas. These regulations provide a balanced approach and are designed to protect park resources. The Office was responsible for drafting regulations, identifying legal options, and reviewing ancillary materials and written memoranda. Also, the Office assisted and will continue to assist NPS in drafting amendments to 36 C.F.R. Part 67, tax certification regulations, and 36 C.F.R. Part 60, National Register listing regulations.

2. Land Acquisition Policies: The Office provided oral and written legal advice including reviewing policy statements, identifying legal options, and assisting the Department of Justice in condemnation actions. In addition, the Office was involved and will continue to be involved in land exchange activities, such as the Collier land exchange and the Manassas Battlefield addition. The Office reviewed preliminary and final title opinions and provided legal advice on direct purchase/gift operations.

3. Alaska Subsistence Activities: The Alaska Lands Act requires a delicate balance by the Department between subsistence activities by Alaska Natives and the preservation of National Park resources. The Office participated in providing oral and written legal analysis in development of management strategies for maintaining this balance, and identified legal options to deal with issues arising from Alaska's subsistence laws and the subsistence councils for park areas.

4. Implementation of the Coastal Barrier Resource Protection Act: The Office provided written and oral legal advice to the Department's Task Force on Coastal Barriers to implement this legislation. Legal advice was provided on the various reports to Congress, boundary modifications, and guidance to federal agencies on implementation of the Act.

5. Law Enforcement: The Office continues to be active in defending lawsuits and providing "on the street" advice with respect to public demonstrations.

6. GAO Bid Protests: In fiscal year 1989, this Office handled 8 GAO bid protests concerning NPS procurements.

7. American Revolution Bicentennial Administration Claims: In the FY 1989 Interior and Related Agencies Appropriations Act (Pub. L. 100-446), Congress provided funds to pay these claims, so long as the funds were disbursed within 30 days and in accord with the Department's determinations. All disbursements were effected by the Office on October 14, 1988.

8. Ellis Island -- Statue of Liberty: The Office provided legal review of the rehabilitation effort of these two historic facilities. Legal assistance will be provided at least until the Ellis Island Centennial in 1992.

9. Filene Center -- Wolf Trap: In fiscal year 1988 the Office advised the Foundation of the obligation to repay the loan to the United States for the reconstruction efforts, and drafted and negotiated a settlement agreement with the Foundation. The Office also reminded the Foundation of the past due date (November 23, 1988) for the entire loan. The Foundation and the Department are continuing discussions on the matter of the past due liability. Legal advice will be provided relative to the repayment of the past due loan. The Office will continue to advise the NPS on various aspects of the reconstruction work.

10. Intellectual Property: The Office provided copyright logo and service mark review, and registration of marks developed by the National Park Service.

11. Tennis Stadium Contract: The Office assisted the National Park Service in completing a contract for the donation and construction of a professional caliber tennis stadium in Rock Creek Park, Washington, D.C. Additional modification of this contract is being undertaken to fine tune the operations at the center.

12. Potomac River Waterfowl Hunting: This office assisted the National Park Service in preparing legal documents to authorize the Maryland Department of Natural Resources to manage waterfowl hunting blinds off park land in Maryland waters. A similar arrangement is being negotiated with the Commonwealth of Virginia for blinds in Virginia waters.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Special Events in the National Capital Region: The Office expects to be working with the NPS to follow up with regulations to implements recommendations on the National Capital Region's Special Event task force. These regulations will focus on various time, place and manner restrictions on the proliferation of special events and festivals in the Region. They will also focus on bonding and reimbursement conditions to help the NPS offset unbudgeted costs associated with these events.

2. Reserved Water Rights: The Office will continue to provide legal counsel to the National Park Service and assistance to the Department of Justice in the adjudication and negotiation of water rights in Colorado, Wyoming, Idaho, Montana, Utah, Arizona, New Mexico and Washington. This litigation is time consuming and precedent setting.

3. Land Acquisition Policies: The Office will assist NPS, where appropriate, in developing legal strategies for handling land acquisition cases and outstanding deficiencies on condemnation awards. The Office will review all condemnation cases before transmittal to the Department of Justice, provide oral advice on options available, and provide written and oral advice on settling condemnation cases for areas of the park system. The Office also provides legal assistance to implement the Secretary's land acquisition initiatives. In addition, the Office expects legal work to result as the Department explores exchange opportunities as a land acquisition tool.

4. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): CERCLA, generally known as Superfund, creates a regulatory framework for cleaning up hazardous waste sites and establishes a fund to finance governmental clean-ups of those sites. The Office provides legal advice and assistance in order to facilitate the timely filing of claims against persons and corporations who are liable for hazardous waste releases on NPS lands. The initiation of natural resource damage claims particularly as a result of the Exxon Valdez oil tanker accident will require a significant level of work for the Office. The Office will assist NPS in reviewing land acquisition policies to guard against unintentional acquisition of hazardous waste sites, and provide assistance on federal facility compliance obligations.

5. Settlement of Alexandria Waterfront Litigation: One of the priorities of the NPS is settlement of this long-standing litigation with the City of Alexandria and the private property owners. Most of the litigation involving private tracts has been settled and a comprehensive settlement has been reached with the City. The Office has provided legal support to the Department of Justice in furthering settlement negotiations by providing oral and written legal advice on settlement options. This litigation will extend into fiscal year 1991.

6. Concession Contracting: The Office will continue to provide legal assistance to NPS in concession contract administration in order to provide a greater influx of funds to rehabilitate visitor facilities in the various parks, and provide greater management flexibility. Litigation concerning the scope of NPS discretion in authorizing concession activities will continue through fiscal year 1991.

7. Historic Preservation: The Office will continue to draft and review regulations, prepare legal opinions, and provide oral advice on the Department's responsibilities regarding historic preservation, and alternative methods for determining whether properties are eligible to be listed on the National Register. The Office also provides counsel to the NPS on whether the renovation or rehabilitation of historic properties meets Secretarial standards and is entitled to a tax credit.

8. Historic Building Leasing Program: The 1980 Amendments to the National Historic Preservation Act provide for leasing to the private sector of historic buildings administered by NPS. The Office will continue to provide legal advice to NPS to implement this program.

9. Alaska Subsistence Activities: The Office will provide legal analysis and written opinions on the various issues associated with protecting park resources, State compliance with the federal laws, and the need for the State to consider federal statutory standards.

10. Transportation and Utility Systems in Alaska Parks: The Alaska National Interest Lands Conservation Act (ANILCA) provides special statutory standards for transportation and utility systems across federal lands in Alaska. Regulations to implement this authority have been published, and the Office will assist NPS in implementing these provisions and defend litigation challenging the regulations.

11. Alaska Land Exchanges: The Office will continue to provide legal advice to NPS on the development and implementation of land exchanges in Alaska which affect areas of the National Park System.

12. Alaska -- ANILCA: In addition to the specific projects identified above, the Office will continue to assist NPS in the development of ANILCA regulations and guidelines to implement, for example, closure of parks to off-road vehicles, procedures for cabin permits, and commercial fishing activities. The Office will also assist the Department of Justice in litigation challenging the cabin regulations.

13. Clean Air Act: The Office will continue to assist NPS by providing written and oral legal opinions on implementing its responsibilities under the Clean Air Act and regulatory revisions prepared by the Environmental Protection Agency, in order to protect park resources.

14. Civil Penalties: The Office will develop a uniform civil penalty procedure under the Archeological Resource Protection Act for assessing civil penalties incurred by individuals who remove from federal property archeological resources, contrary to federal law. The Office is also responsible for handling the civil penalties proceedings before the Office of Hearings and Appeals.

15. GAO Bid Protests: Continued bid protests and injunctive litigation are contemplated under the Competition in Contracting Act of 1984.

16. Law Enforcement: The Office will continue to provide legal assistance to the National Park Service law enforcement officers and to the U.S. Park Police on a wide variety of park law enforcement efforts. The Office anticipates more trespass type actions in the environs of the District of Columbia. Also, increased drug enforcement efforts by the U.S. Park Police continues to generate some additional legal work. In addition, periodic demonstrations by controversial groups in various East Coast park areas require legal attention.

17. Manassas Legislative Taking: The Office will continue to assist the National Park Service on a wide variety of legal issues generated by the legislative taking of the William Center Tract at Manassas, Virginia. Two

large former landowners have initiated litigation seeking a determination of value as to their former property. The Office will be assisting the Department of Justice with these.

18. Management of National Park System The office will continue to provide the National Park Service with day to day advise on a broad range of park management issues. For example, we will be working closely with the Service and the Justice Department in the prosecution of the lawsuit against the State of Florida over water releases to Everglades National Park.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

The Office will continue to provide legal service concerning the implementation of Alaska-related legislation; adjustment, modification, and implementation of land protection and acquisition strategies; and the tax benefit programs associated with the renovation of historic properties.

In addition, the Office will continue to provide legal advice regarding regulatory revisions, implementation of the Clean Air Act, strategies for resolving threats to parks, strategies for increasing private investment, in park visitor facilities, First Amendment activities, and reserved water rights. This legal involvement will take the form of providing legal opinions at the request of the Assistant Secretary--Fish and Wildlife and Parks and the National Park Service Director, reviewing of regulations, and representing NPS at hearings.

The Office will have a significantly increased workload associated with implementation of the Superfund through legal action against those primarily responsible for hazardous waste sites on federal lands, the Alaska oil tanker accident legal issues, and through efforts to minimize the avoidance of NPS acquisition of lands contaminated with hazardous wastes. The Office is also involved in lawsuits involving the programs and activities of the National Park Service. The increased workload associated with protecting park areas from external threats will likely increase as a result of the Department's initiatives in these areas. Also, additional work can be expected as the full Pennsylvania Avenue Development Plan is implemented.

Finally, continued bid protests and injunctive litigation are expected under the Competition in Contracting Act of 1984.

BUREAU OF INDIAN AFFAIRS
Client

BASE ACTIVITIES:

Land, Water, Natural Resources and Related Trust Responsibilities: The United States holds approximately 53 million acres of real estate in trust for Indian tribes and individual Indians. Under various treaties and statutes the federal government, through the Bureau of Indian Affairs (BIA), has the responsibility for overseeing the management of this land and associated natural resources for the benefit of Indians. This includes the sale and acquisition of land, probate of Indian estates, approval of leases, permits and rights-of-way, mineral development activities, timber sales, forestry and range management, management and investment of Indian trust funds, and management of irrigation projects. A wide variety of legal issues arise as a result of these responsibilities, and a number become the subject of administrative appeals and judicial litigation. In addition, Indian tribes and other Indian landowners request the government to defend their trust resources and assert or assist in asserting such claims in such formal proceedings. Other important activities in this area include adjudication, quantification, and settlement of claims to water rights appurtenant to Indian lands; enforcement, protection, and regulation of fishing and hunting rights reserved to Indian tribes by treaty; and resolution of issues involving taxation, zoning and condemnation of Indian natural resources, and perfection of hydroelectric rights.

Social Programs: The major portion of the BIA budget goes toward providing social services to Indian people residing on or near Indian reservations. Such services include education, employment assistance, welfare, housing, investment management, and economic development. These programs are authorized under the general authority of the Snyder Act, but are also conducted in accordance with a variety of specific laws such as the Indian Financing Act, the Indian Self-Determination and Education Assistance Act, the Indian Education Amendments of 1978 and 1988, the Indian Judgment Fund Distribution Act, and the Indian Alcohol and Substance Abuse Prevention and Treatment Act of 1986. Some of these social services, such as scholarships and small business loans, are provided directly to eligible Indian applicants, but many are part of programs contracted out to Indian tribal organizations pursuant to the Self-Determination Act. The BIA regularly requires legal services in interpreting applicable laws, making and enforcing contracts and inter-agency agreements, drafting and promulgating rules, preparing judgment fund distribution plans and legislation, collecting debts, handling administrative appeals, and defending litigation.

Reservation and Tribal Status: Tribal governmental status gives rise to numerous legal questions relating to the extent of tribal authority, governmental procedures, including tribal elections, and law enforcement and regulatory jurisdiction. The BIA is often involved in adopting, amending, and implementing tribal constitutions and charters pursuant to the Indian Reorganization Act and the Oklahoma Indian Welfare Act; approving tribal ordinances pursuant to federal and tribal law; developing tribal membership rolls pursuant to specific federal laws; funding and technical support of many governmental functions, such as tribal courts, police, and accounting and management systems pursuant to the grant authority in the Indian Self-Determination Act; resolving election disputes to determine the authorized officials of a tribe; and determining what Indian groups are entitled to acknowledgment of tribal governmental status. The above activities require a wide range of legal counsel, including representation of the BIA in litigation over governmental and jurisdictional authority. Further legal services are rendered in connection with interpreting the Indian Civil Rights Act; implementing the Alaska Native Claims Settlement Act and the Alaska National Interest Lands Conservation Act; contracting with Indian tribes pursuant to the Indian Child Welfare Act; advising the Bureau of Indian Affairs and others on gaming on Indian reservations; enforcing federal criminal laws in Indian country, including liquor control laws; and interpreting various tax laws, such as the Tribal Governmental Tax Status Act.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Colorado Ute Water Rights Settlement: This settlement, enacted in 1988 (Pub. L. 100-585), provides for resolution of Southern Ute and Ute Mountain Ute reserved water rights and enables the construction of the Animas-La Plata Reclamation Project. Staff time was devoted during the year to answering inquiries on the settlement and in continuing work on the settlement documents, which remain to be filed to obtain a consent decree to finalize the settlement.

2. San Luis Rey River Water Rights Settlement: Pub. L. 100-675, enacted in 1988, settled longstanding litigation of the reserved water rights claims of five Mission Indian Bands in San Diego County, California. The Office worked with all the litigants and other federal agencies to address issues raised by the settlement and pending litigation, including work on a report to Congress, and work on the agreement needed to finalize the settlement.

3. Salt River Pima-Maricopa Water Rights Settlement: Legislation enacted in 1988 resolved claims to water on the Salt River and Verde River for the Salt River Indian Reservation and a number of private and local governmental interests in the Salt River Valley. The Office worked with parties to the settlement on implementation efforts during the year.

4. Indian Water Rights Settlements: The Office provided legal assistance on Indian water law to Departmental representatives in almost a score of major settlement negotiations in Idaho, Montana, Oregon, Utah, Arizona, Nevada, and New Mexico.

5. Indian Fishing Rights: The Office continues as the legal advisor to the Department with respect to the Pacific Salmon Commission which implements the treaty with Canada governing the interception of Pacific salmon that have spawned in the waters of one country by the fishing fleet of the other country. The Office also works with the regulations of both the BIA and the National Marine Fisheries Service needed to implement the Treaty. The Office provided counsel on a wide variety of fishing issues, particularly in the Pacific Northwest. The Office was also the legal advisor to the Department's representative to the council overseeing implementation of the settlement of litigation over treaty rights to the fishery of the Great Lakes (*United States v. Michigan*). The Office continued work with the Department of Justice concerning litigation on behalf of the Mille Lacs Chippewas against Minnesota and on subproceedings in *U.S. v. Washington*, concerning intra-tribal allocations and state taxation of boats used in the treaty fishery.

6. Indian Education: The Office worked closely with the Department of Education on a number of issues concerning administration of several Titles of the Education Amendments of 1978, including litigation and other matters requiring extensive legal service. One of the more active matters was litigation involving the staffing of the Phoenix Indian School for the interim pending its closure. The Education Amendments of 1988, which made significant changes in Pub. L. 95-561, the law governing BIA's education program, continued to result in many demands for legal services during the year.

7. Short et al. v. United States and Puzz v. United States: At the beginning of 1989, the eligibility of hundreds of Short plaintiffs to recover damages still remained undetermined in this 26 year-old case involving 3800 plaintiffs. Some 2400 Short plaintiffs have been determined eligible to recover damages. The Claims Court assigned an extra law clerk to assist the judge in his efforts to enter final judgment as soon as possible. The case demanded considerable staff service during the year and undoubtedly will for the foreseeable future.

Puzz v. United States, which is related to the Short case, was mooted by the Hoopa-Yurok Settlement Act. However, the Office continues to devote time to the case in connection with an Equal Access to Justice attorney fee petition.

8. Special Education: The Office continued to provide legal advice regarding problems arising from determining the amount and source of payment of indirect costs for Chapter I and special education programs contracted under the Indian Self-Determination Act. The question received renewed attention in light of the 1988 Amendments to the Act. The BIA and the Department of Education redrafted their Memorandum of Understanding to be consistent with Education Act amendments and to continue special education services. The Office was actively involved in discussions on the Memorandum and provided legal services on a broad range of special education services.

9. Indian Self-Determination Act Regulations: The Office devoted considerable effort to assisting BIA, in Washington and in the field, in connection with consultation with tribal representatives and the preparation and publication of proposed new regulations to reflect amendments to the Act, enacted in 1988. Work in promulgating regulations and ensuring proper implementation continues to be a major project for the Office.

10. Buy Indian Regulations: The Office assisted in analyzing public comments on these regulations which had been published as proposed and participated in a general review of the scope and purpose of the regulations.

11. Indian Economic Development: The Office provided advice to BIA on various loans and loan guarantees, as BIA continued to attempt to use its loan and guaranty programs in innovative ways, and to attempt other novel approaches to business and economic development on Indian reservations. Recent amendments to the Indian Finance Act extended BIA's guaranty authority to include tribal bonds, causing additional work by the Office in counseling BIA on implementing the new authority.

12. 638 Contract Issues: The Office provided counsel on issues raised by Tribal contracting for the operation of reservation schools under Pub. L. 93-638 and Pub. L. 95-561.

13. Alcohol and Drug Abuse: Counseling continued in connection with BIA's alcohol and drug abuse program in conjunction with the Department of Health and Human Services and the Department of Education.

14. Constitutions for Alaska Villages: The Office devoted considerable attorney time dealing with requests from approximately a dozen Native villages for elections on constitutions or constitutional amendments under the Indian Reorganization Act. Two village constitutions were adopted and approved in 1989.

15. Alaska Native Entities List: The Office dealt with a number of questions arising from publication of the Alaska Native Entities List. The Office provided legal assistance in the development and publication of the list.

16. OJO Transmission Line - Environmental Impact Statement (EIS) Appeal: An appeal was filed by the Attorney General of New Mexico and Indian tribes on the legal adequacy of the EIS prepared for the extension of KV transmission lines. Based on an opinion from the Solicitor's Office, the appeals were dismissed for lack of jurisdiction. An appeal to the Federal District Court was filed by four Pueblos and two public interest groups. Summary judgment motions were filed for all issues. The Office also provided an opinion regarding the Forest Service's need for a supplemental EIS. Summary judgment motions on all issues have been filed with the court.

17. BIA Appeal Regulation Revision: The Office provided legal assistance to BIA in implementing the revisions to 25 CFR Part 2, reforming BIA's administrative appeal procedures. The Office had provided legal assistance in the development and publication of the new regulations.

18. Indian Trust Fund: Legal advice was provided on contracting out the custody and management investment aspects of the Indian Trust Fund of approximately $1.8 billion. Work continued on implementing a contract signed to carry out these activities during the year. The Office is advising in a number of areas key to contract operations and assisting BIA in answering numerous inquiries concerning the contract and its operation and effect.

19. Social Services: Work on regulations continued to define eligibility for custodial care in BIA-supported institutions and to build more work experience and training into the general assistance program.

20. Forced Fee Patent Claims: The Office assisted in appeals in which the Eighth Circuit Court of Appeals affirmed rulings by two District Courts dismissing sixteen claims based on issuance of the patents to allottees without requests from the allottees. (Nichols v. Rysary). The Supreme Court denied the petition for certiorari.

21. Alaska Native Claims Settlement Act: The Office was involved with a variety of BIA efforts to expedite and bring to a conclusion the adjudication of Native allotments, as well as ongoing analysis of the 1987 amendments to the Act in order to answer inquiries concerning the changes in the law.

22. Shi Shi Keyah Association v. Hodel: This major oil and gas royalty management action was settled in fiscal year 1989. Extensive legal work and negotiations continue, particularly on plaintiffs' application for fees under the Equal Access to Justice Act.

23. Newlands Reclamation Project: The Office provided legal counsel to BIA and other departmental offices and worked with the Department of Justice on several lawsuits and other legal issues affecting the Secretary's activities regarding operating criteria and procedures (OCAP) for the Project. This activity involved not only BIA but also the Bureau of Reclamation and the Fish and Wildlife Service. Challenges to the OCAP were filed by the farmers, State of Nevada and the Pyramid Lake Paiute, and the Office worked with the Department of Justice to review briefs filed by plaintiffs and to assist the Department of Justice in developing responses and preparing the government's brief in support of the OCAP, which was filed during the year.

24. Stillwater Wildlife Refuge Water Transfer: The Office assisted in the preparation of an opinion on the propriety of the use of Newlands Project facilities to transfer acquired water rights to the Refuge.

25. Stampede and Alpine Decisions and Miscellaneous Pyramid Lake Questions: The Office responded to a number of requests for materials and questions concerning the Stampede and Alpine cases, including followup to the Ninth Circuit's decision in favor of the government's position in these cases.

26. Federal Energy Regulatory Commission Proceedings: The Office issued an opinion for BIA on the status of the Penobscot Reservation as a reservation within the definition of the Federal Power Act.

27. Blue Legs Case and Hazardous Substances Issues: The Office continued consultation with the Environmental Protection Agency and the Department of Justice on the issue of United States liability for hazardous substances on Indian lands. The Office worked with the Department of Justice on the question of seeking Supreme Court review of the Blue Legs case, in which the 8th Circuit found federal liability for certain open dumps on Indian lands. The Solicitor General decided against filing a petition for certiorari. This Office continued to assist the Department of Justice in strengthening the government's position in the case in further proceedings before the District Court.

28. Bowhead Whales: To protect the subsistence hunting rights of Alaska Natives, the Office participated as part of the United States delegation to the International Whaling Convention (IWC). This Office succeeded in securing the U.S. delegation's recommended quota of Bowhead whale during the last meeting of the IWC.

29. Five Civilized Tribes: The Office continued to work on the reform of procedures and strengthening the Office's work associated with the state court approval of leases and conveyances of restricted lands of Indians of the Five Civilized Tribes in Oklahoma pursuant to the Act of August 4, 1947. Two more appeals of state court approvals were filed with the Oklahoma Supreme Court. An earlier oil and gas lease appeal, In re Deo v. Robertson, was the subject of a favorable ruling by the Court of Appeals on November 21, 1989.

30. Gaming: The passage of the Indian Gaming Regulatory Act resulted in substantial attorney time being devoted to answering questions from tribes, the states, U.S. Attorneys, and the public. Until the National Indian Gaming Commission is operational, additional attorney time will be spent assisting in the implementation of the Act. Work continued on a suit filed challenging the constitutionality of the new law (Red Lake Band of Chippewas v. Swimmer).

31. Tribal Taxation: The Office worked with BIA on questions arising from several tribes' efforts to increase their self-sufficiency through increased revenues by taxation.

32. Tribal Jurisdiction: The Office worked with BIA and the Department of Justice on questions arising from efforts by several tribes to clarify their civil and criminal jurisdiction.

33. Acknowledgment Procedures: The Office assisted with the proposed revision of regulations on the procedure by which the federal government acknowledges tribal status.

34. Law and Order on Indian Reservations: The Office continued with review of the proposed revision of 25 CFR Part 11 and putting the regulations in final form. Further technical assistance was provided to the BIA in connection with additional rulemaking in response to the Anti-Drug Abuse Act of 1986.

35. Settlement of U.S. v. Mitchell (Mitchell II): The Office assisted Justice in the settlement of this landmark case in Indian trust law (see FY 1991 entry concerning other Mitchell II-type cases). Mitchell II was settled during the year.

36. Flathead Indian Irrigation Project, Montana: Legal activity in connection with this project continued, involving operation by the Confederated Salish and Kootenai Tribes of the Electric Power System portion of the Flathead Indian Irrigation Project under a 638 contract with BIA. The power system sells electric power to both Indian and non-Indian customers. Work continued on lawsuits filed challenging the contract and seeking to compel the Department to turn over the project to the non-Indian irrigators. The Department's authority to regulate the project to protect tribal resources was upheld in the Ninth Circuit. The Secretary's authority to contract with the Flathead Tribes for certain aspects of project administration has been upheld by the federal district court in Montana. Other legal issues in the cases dealing with the project continue before the District Court.

37. Big Horn River Adjudication, Wyoming: While the reserved water rights of the Shoshone and Arapaho Tribes of the Wind River Reservation, Wyoming, were being adjudicated in a Wyoming court, preliminary rulings persuaded the State to initiate settlement discussions. The Wyoming Supreme Court awarded 500,000 acre-feet of water to the Tribes for a variety of uses. The Supreme Court upheld the State Court's decision. The Office assisted the Department of Justice in working on the briefs and argument before the Supreme Court.

38. Indian Mineral Resources Development: Rules to implement the Indian Mineral Development Act of 1982 and to update mineral regulations were re-proposed at the beginning of fiscal year 1988. Substantial legal review continues in developing final rules. Novel mineral venture agreements continue

to require review by the Office prior to approval by the BIA. The influx of novel agreements should continue to require considerable legal resources and litigation involving oil and gas and mineral development issues.

39. Peabody Hopi Mining Agreement Expansion to 180 Million Tons Coal: Peabody Coal Co. and the Hopi tribe agreed to allow Peabody to expand the coal production it is mining under an existing lease by up to 180 tons per year. The Secretary approved the new expansion agreement. NEPA compliance issues were resolved. The Solicitor's Office will continue to provide legal assistance in each of these efforts.

40. National Federation of Federal Employees (NFFE) v. Lujan: The Office defended a lawsuit filed by the NFFE challenging the design of BIA's pay schedule for contract teachers, counselors, and homeliving specialists, established under P.L. 100-297.

41. Senate Select Committee Investigation of Indian Affairs: The Office assisted BIA in gathering materials and otherwise responding to requests from the Special Investigations Committee of the Select Committee.

42. Littlewolf v. Lujan: The Office assisted the Department of Justice in defending the constitutionality of the White Earth Reservation Land Settlement Act. In fiscal year 1989 the District of Columbia Circuit ruled that the Act was constitutional. Further work continued on opposing the plaintiffs' petition for certiorari.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR COMPLETED:

1. Defending Litigation in Light of the Mitchell II Decision: A Supreme Court decision in June 1983, United States v. Mitchell (Mitchell II), opened the door to many potential suits in the U.S. Claims Court by Indians alleging that the BIA has breached its statutory trust responsibilities in connection with the management of Indian-owned natural resources. Several such suits have already been filed, and the Office is working with the Department of Justice on various aspects of defending such litigation. Work will continue in subsequent years.

2. Indian Education: The Education Amendments of 1988, which made significant changes in previous law, are continuing to require legal services. Preparation and review of regulations require much legal advice. These are being followed by amendments of the funding formulas for BIA-operated and funded schools. Amendments are under consideration to regulations governing attendance in BIA schools and payment of tuition by some students. The Office will continue to work with BIA as it analyzes public comment and considers modifications to education regulations and procedures.

3. Papago Water Rights Settlement: Implementation continues of the settlement contracts and actions to dismiss the lawsuits that led to the settlement.

4. Southern Colorado Water Right Settlement: Implementation of Pub. L. 100-585, the settlement legislation, continues in 1990. Settlement agreements and consent decree provisions will require disposition.

5. San Luis Rey River Water Rights Settlement: Work continues on the implementation of Pub. L. 100-675, enacted in 1988, settling longstanding litigation of the reserved water rights claims of five Mission Indian Bands in San Diego County, California.

6. Salt River Pima-Maricopa Water Rights Settlement: The Office continues to assist in implementing legislation resolving claims to water on the Salt River and Verde River for the Salt River Indian Reservation and a number of private and local governmental interests in the Salt River Valley.

7. Fort Peck-Montana Compact: The Office continues to work with issues related to implementing this settlement, as needed. A Fish and Wildlife Service proposal to transfer Ft. Peck water rights to a wildlife refuge will focus attention on the Compact during the year.

8. Newlands Reclamation Project: Nearly a dozen pieces of litigation related to Pyramid Lake continue to require the attention of several attorneys in the Office. Among the issues involved is the operation of the Newlands Project in a manner which allows certain endangered and threatened species of fish to survive and implementation of final operating criteria and procedures (OCAP) for the Project. Attention will be devoted during the year to efforts by the Pyramid Lake Tribe to settle some of the cases and to continued efforts by various interests in Nevada to transfer water rights to the Stillwater Wildlife Refuge, potentially affecting water available to Pyramid Lake.

9. Flathead Indian Irrigation Project, Montana: Legal activity in connection with this project continues, involving operation by the Confederated Salish and Kootenai Tribes of the Electric Power System portion of the Flathead Indian Irrigation Project under a 638 contract with BIA. The power system sells electric power to both Indian and non-Indian customers. Lawsuits continue, challenging the contract and other legal issues in the cases dealing with the project are before the District Court.

10. Big Horn River Adjudication, Wyoming: The Shoshone and Arapaho Tribes of the Wind River Reservation, Wyoming, and the State have requested the assistance of the Department in post-trial negotiations which will involve the Office. The Supreme Court's decision in fiscal year 1989 upholding the State Court's decision, awarding 500,000 acre-feet of water to the Tribes for a variety of uses, has caused the Office workload to increase, as the Tribes seek to use and manage their confirmed water rights and the State and others seek to negotiate issues perceived to be unresolved by the Supreme Court decision.

11. New Mexico Water Cases: The Office remains very much involved in the resolution of water cases in New Mexico. For example, some preliminary decisions by the federal district court were issued in New Mexico v. Aamodt regarding the water rights of four Indian Pueblos, but a number of legal issues remain to be resolved. In another Pueblo water rights case, United States v. Abousleman, trial is continuing and will continue for several years. In four others, stays have been lifted and trial phases currently are scheduled to be completed within two years. Trial work will continue in the Mescalero Apaches' water rights case, New Mexico v. Lewis. Settlement negotiations continue with the Jicarilla Tribe regarding their claims to water.

12. Indian Water Rights Negotiations: In addition to the Indian water rights negotiations mentioned above, the Office continues to participate in negotiations involving a number of Indian tribes that claim water. For example, negotiations are underway between Idaho and the Shoshone-Bannock Tribes of Fort Hall and other Idaho tribes, and between Oregon and the Confederated Tribes of the Warm Springs Reservation. The Yakima Tribe's water rights in Washington (U.S. v. Acquavella) are in the preliminary stage for trial, and the State of Oregon is pursuing a general stream adjudication. Work will continue on expediting negotiations in Montana.

13. Gaming: The Office will continue to devote considerable time in assisting the Bureau of Indian Affairs, the Tribes, and the public in the implementation and the interpretation of the Indian Gaming Regulatory Act. This Office will also provide assistance to the National Indian Gaming Commission which should be established this year. This Office will continue to assist the Department of Justice in defending the constitutionality of the new Indian Gaming law (Red Lake Band of Chippewas v. Brown). The Office will also be providing legal review of tribal-state compacts for Class III gaming under the new law, such as a recent Comanche-Oklahoma agreement on a horse racetrack.

14. Fishing Rights: In United States v. Washington, significant litigation and negotiations involving the treaty with Canada continue over rights which may exist under the Indian treaties and the extent to which the harvest of fish in the ocean affects the Indian/non-Indian allocation under earlier court orders. The Office is continuing as the legal advisor to the Department in treaty matters. The Office anticipates further settlement negotiations or litigation in United States v. Washington over the accounting for fish caught, the extent of tribal rights to harvest shellfish, clarification of tribal usual and accustomed fishing areas, and mediation of inter-tribal allocation disputes. Many aspects of the 15 year settlement of treaty claims to the Great Lakes Fishery continue to be controversial and to require attention in United States v. Michigan. Substantial claims to off-reservation hunting and inland fishing in Michigan, Wisconsin, and Minnesota as a result of LCO v. Voigt have been asserted. The State of Wisconsin sought unsuccessfully to involve the United States as a party. Fishing rights issues will continue to require a great deal of legal attention.

15. Alaska Natives: The Office anticipates ongoing review of the implementation of the Alaska Native Claims Settlement Act of 1971, as amended in 1987. Further work will be required on the numerous requests by Native Villages for Secretarial approval of elections on Constitutions pursuant to the Indian Reorganization Act.

16. Indian Self-Determination Act: The Office will continue to devote considerable effort during the year to assisting BIA, in Washington and in the field, in connection with consultation with tribal representatives and the preparation and publication of new regulations to reflect amendments to the Act, enacted in 1988.

17. Indian Claims Settlement Acts: Legislation resolving all White Earth allotment claims was enacted in the spring of 1986, and the Office continues to assist the BIA in implementing this complex legislation and the Department of Justice in defending challenges. Additionally, legislation resolving the claims for reimbursement of Old Age Assistance payments was passed in 1985, and

major implementation efforts will continue in fiscal year 1990. Acts settling the Gay Head, Puyallup and Seminole Tribes' claims have also been enacted, and implementation of both Acts will involve the Office. New settlements are being proposed which are also involving the Office in meetings and review of documents, e.g., Oneida.

18. Acknowledgment of Tribal Status: Several years ago, a number of groups of Indian descendants seeking to establish their existence as Indian tribes received research grants from another federal agency. The results of the research have been and continue to be received by BIA, creating a substantial number of petitions awaiting processing and review. Substantial time will be spent by the Office assisting in evaluating those petitions. BIA has also drafted proposed revised regulations affecting the acknowledgment process, which will require review and analysis after publication for public comment. In addition, the final decisions on several significant preliminary determinations will be made and the Office will defend litigation challenging some prior determinations.

19. Federal Energy Regulatory Commission (FERC) Proceedings: The Office will continue to participate as intervenor on behalf of the Secretary for various Indian tribes in a number of proceedings before FERC regarding water and water power issues and the protection of tribal fishing rights in the context of the development of hydroelectric power projects. The Office is advising the BIA in ongoing appeals and litigation involving FERC's cumulative impact studies of the Snake, Salmon, Snohomish and Penobscot River basins. The Office is also representing the Secretary in the proceedings governing the Potter Valley Project in northern California and the Ludington pump storage facility on Lake Michigan.

20. Indian Economic Development: Office activities in reviewing legal aspects of various proposals to finance Indian business ventures will accelerate further in fiscal year 1990, including the activity anticipated with additional funding authority having been approved by Congress to implement the new tribal bond guaranty program authorized by the 1988 Amendments to the Indian Financing Act.

21. Navajo-Hopi Settlement Act: The Department is involved in several major lawsuits involving the Hopi land claims and implementation of the Settlement Act, and in three lawsuits filed by the Hopis in the Claims Court. The Office will work with the BIA on a continuing basis to resolve legal concerns involved in the Settlement Act and will devote considerable time in particular to support of the relocation effort required by the Act.

22. Indian Royalty Management: The Office is involved in defending the Department in numerous suits alleging mismanagement of Indian oil and gas royalty revenues. The Office will continue to assist the Bureau of Indian Affairs, Bureau of Land Management and Minerals Management Service in meeting the requirements of the Federal Oil and Gas Royalty Management Act of 1982 and to assure that Indian mineral owners receive prompt and accurate royalty payments. Attorneys in the Solicitor's Office are participating in the Department's Joint Steering Committee to address management problems in the Indian oil and gas program.

23. Indian Trust Funds: It is anticipated that the contract for assistance in managing Indian trust funds will be operational during the year. Especially heavy demands for legal advice continue in connection with the initiation and operation of anticipated changes in the management and investment of Indian trust funds under the contract.

24. Social Services: The Office will continue to assist in developing regulations and related materials to build more work experience and training into the general assistance program, as well as in implementing program changes for the same purpose.

25. Child Abuse Prevention: Public disclosure of incidents of sexual abuse of Indian students in BIA and BIA-contracted schools has resulted in the need for much legal advice on hiring personnel and contract review, as well as work with BIA, the Indian Health Service, local authorities, and the Department of Justice to improve law enforcement and victim assistance for abused children. The staff efforts are expected to intensify as the year progresses.

26. Tribal Membership Rolls: Several tribes are proposing changes in the criteria for tribal membership which would ease eligibility requirements considerably. Since there is no uniform definition of who is an Indian for purposes of eligibility for Federal programs, a change by one tribe of its membership criteria can produce a sudden increase in the service population and affect the short term availability of Federal services to neighboring tribes. The Office will continue to work with BIA on the standards involved and the legal propriety of the proposals.

27. Short et al. v. United States: It is possible that the eligibility of plaintiffs will be determined during the year. If so, the final order of the Claims Court in this case could be issued during fiscal year 1990. Actions of the court, however, in dealing with damages indicates that this issue will be a matter of continuing concern in 1990. On October 31, 1988, the Hoopa-Yurok Settlement Act was enacted. The Settlement Act expressly does not affect the Short case, but it, inter alia, partitions the Hoopa Valley Reservation between the Hoopa Valley Tribe and the Yurok Tribe. Since its enactment, the Settlement Act has required large amounts of legal service, which demand is expected to continue through fiscal year 1990.

28. Indian Mineral Resources Development: Rules to implement the Indian Mineral Development Act of 1982 should be issued during the year. Novel mineral venture agreements will continue to require review by the Office prior to approval by the BIA. The influx of novel agreements should continue to require considerable legal resources and litigation involving oil and gas and mineral development issues.

29. Program Regulation: In addition to the revision of the Indian Self-Determination regulations and the preparation or revision of Education regulations, major new BIA regulations and revisions and amendments of old ones are in various stages of preparation and review. Promulgating these regulations has required in the past, and will continue to require, much service by the Office.

30. Alcohol and Drug Abuse: The Office will provide legal support in implementing BIA's program to combat alcohol and drug abuse on Indian reservations.

31. Tribal Tax Ordinances: The Office will continue to advise the BIA on legal issues relating to tribal tax ordinances in response to tribal efforts to become more self-sufficient in the face of more complex and comprehensive tribal tax plans.

32. Environmental Impact Statement (EIS) on Reclamation of Uranium Abandoned Pit: At an uranium mine in Washington, the Office will assist the BIA in attempting to prevent further environmental problems and to force the current lessee to begin reclamation. There is an abandoned uranium open pit on the Navajo lands in Arizona which has to be cleaned up and reclaimed. An EIS is underway on the cleanup operation and legal review.

33. Indian Land Law Enforcement in Oklahoma: The Office will continue to assist the BIA, Indian tribes, U.S. Attorneys, and local law enforcement officials to deal with continuing jurisdictional questions raised by court decisions.

34. Bowhead Whales: This Office will continue to represent the Department as part of the United States delegation to the International Whaling Commission. The Office anticipates it will coordinate resolution of issues in response to the Alaska Native application for a Bowhead quota, to be considered at the 1990 Commission meeting.

35. Indian Land Consolidation Act: The Supreme Court struck down the escheat provision as originally enacted in 1983. Two suits subsequently have been filed challenging the 1984 amended version. The Office is in the process of assisting the Department of Justice in the settlement of these cases. Work will continue on the question of the plaintiffs' entitlement to attorney fees.

37. Kerr Project, Montana: The Fish and Wildlife Service studies under Section 4(e) of the Federal Power Act will continue. License conditions based on the 4(e) studies are scheduled for submission to the Federal Energy Regulatory Commission (FERC) during the year. This Office is coordinating a number of matters related to preparation of the conditions and frequently represents the Department before FERC.

38. Indian Child Welfare Act: The Office will continue to be involved in defending the Department in Navajo v. Hodel, where the Indian Child Welfare regulatory process and procedure are being challenged. It is expected that this case will go to trial in fiscal year 1990. It is also anticipated that BIA will need assistance during the year in revising the regulations involved.

39. General Accounting Office Bid Protests: The Office will continue to provide legal assistance defending the several bid protests that are filed each year.

40. Special Education: The Office will continue to provide legal assistance, as requested, in cooperation with the Department of Education.

41. NFFE v. Lujan: Continued efforts are anticipated in defending this suit challenging BIA's pay schedule for contract teachers, counselors, and homeliving specialists.

42. Surface Leasing Regulations: The Bureau has proposed revised leasing regulations. This Office is coordinating the legal review of the proposed regulations.

43. Arkansas Riverbed Claims: The Office is continuing to work with BIA, BLM, and the Cherokee, Choctaw, and Chickasaw Nations on the development of claims against third-party trespassers.

44. Sac & Fox Groundwater Contamination Claims: The Office continues to work closely with the Sac & Fox Tribe, the BIA, BLM, and USGS in order to develop the evidence necessary to assert damage claims on behalf of the Tribe for damages to the aquifer underlying tribal lands as a result of saltwater contamination.

45. Miccosukee Tribe Special Use Permit Area: The Office anticipates that the Miccosukee Tribe of Florida will initiate steps to secure equitable title to Everglades National Park lands it occupies by virtue of a special use permit from the National Park Service.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Lands and Minerals and other Trust-Related Matters: Rights-of-way and mineral development issues requiring legal assistance are projected to continue, as well as Mitchell II type actions by Indians alleging that the BIA has breached its statutory trust responsibility in connection with the management of Indian-owned natural resources. Higher levels of legal support will be required for increased attention to royalty management reform. The Office will continue to provide legal support for BIA in its improvement of management of Indian trust funds.

2. Indian Water Rights: Activities discussed for fiscal years 1989 and 1990 will continue through fiscal year 1991. The Office will continue to be involved in litigation and related settlement negotiations in a number of complex general stream adjudications involving Indian reserved rights. The Office will be directly involved in some negotiation teams and will provide legal support to others. To the extent litigation is pursued, the Office will continue to participate actively in case preparation, review and assist in drafting briefs and pleadings, and otherwise assist the Department of Justice with preparation and presentation of material in support of Indian water claims.

3. Indian Hunting and Fishing Rights: Off-reservation hunting and inland fishing claims in Minnesota and Michigan are expected to be in litigation and to create significant demands on time and effort.

4. Indian Claims Limitation Act: Increased BIA efforts toward resolution of nearly 36,000 claims is anticipated, resulting in substantial requests for review and for legal assistance.

5. Tribal Jurisdiction and Taxation: The Office will continue to assist the BIA in the review, and where appropriate, the approval of Indian tax codes imposing taxes on non-Indians within reservations and other issues concerning the extent of tribal authority, particularly with respect to non-members.

6. BIA Program and Administrative Reform: Following its reform of trust fund management, BIA intends to extend its reform efforts to certain functions in property management, accounting and financial management and other administrative areas.

7. Bowhead Whales: The Office's participation as part of the United States delegation to the International Whaling Commission on behalf of the Eskimo interest in subsistence hunting is expected to continue.

8. Tribal Self-Determination: Amendments to the Indian Self-Determination Act (Pub. L. 93-638), enacted during the 100th Congress, will continue to require considerable attention, including publication and implementation of final regulations required by the Amendments, and legal support necessary to implement some of the more complex provisions of the amendments, such as the Secretary's responsibility to provide liability insurance for tribal employees operating BIA programs under contracts with tribes.

9. Other Activities: Review of welfare programs will continue with the intent of bringing the BIA program into compliance with recent court orders requiring extended program coverage and in line with national trends in state programs. Economic development initiatives of the prior two years should be fully operational, requiring a broad range of legal advice and assistance concerning the government's role as trustee for Indian land and resources and as a maker and guarantor of loans and guarantor of tribal bonds. These initiatives will require new levels of legal support. As the other activities discussed above extend through fiscal year 1991, the Office will continue to meet the need for increasingly complex legal advice and services in support of the Secretary and BIA.

BUREAU OF LAND MANAGEMENT
Client

BASE ACTIVITIES:

The Bureau of Land Management (BLM) implements a host of laws governing public land and resource management and disposal. Chief among these are the following acts: the Mineral Leasing Act, the Geothermal Steam Act, the Mining Law, the Taylor Grazing Act, the Federal Land Policy and Management Act (FLPMA), the Alaska National Interest Lands Conservation Act (ANILCA), the Federal Oil and Gas Royalty Management Act (FOGRMA), the Alaska Native Claims Settlement Act (ANCSA), the Submerged Lands Act (SLA), and the Alaska Statehood Act (ASA). In addition, BLM must meet requirements imposed by the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and other laws regarding hazardous substances and contaminants. Major fields of legal advice and review include leasing and regulation of federal energy and mineral resources, such as oil and gas, coal, oil shale and geothermal resources, pipeline rights-of-way, withdrawals and conveyancing of public lands, public land management issues such as land use planning and wilderness study, wild horses, and renewable resource programs such as timber and grazing.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Hazardous Waste Statutory Implementation: The Environmental Protection Agency (EPA) published a proposed repromulgation of the National Contingency Plan (NCP) to incorporate statutory changes included in the Superfund Amendments and Reauthorization Act of 1986 (SARA). The Office provided legal advice to the Bureau in its review of these proposed changes which the Bureau considered in providing informal comments to EPA on the proposed revision. The Office assisted BLM in responding to hazardous waste releases from mining and milling claims in Nevada and Alaska and from oil and gas corporations in Montana. The Office advised BLM on potential liability regarding former unpatented mining and milling sites in Colorado and California and participated in negotiations among EPA, the Department of Justice, private parties, and the Bureau regarding these sites. In addition, the Office responded to proposed Federal Facility compliance directives from EPA and has counselled the Bureau on the implications of the Aberdeen case as it relates to criminal liability for willful or grossly negligent violations of the requirements of various hazardous waste laws. The Office provided continuing advice on emerging issues related to Federal Facility hazardous waste liability. In particular, the Office advised BLM on land transfer provisions of CERCLA (section 102(h)) and, in particular, the applicability of these provisions to Alaska native land selections under the Alaska Native Claims Settlement Act. The Office assisted BLM in developing proposed regulations to implement amendments to the Recreation and Public Purposes Act intended to reduce BLM's liability for landfill-related hazardous waste. The Office also advised on the hazardous waste requirements imposed by SARA for land acquisitions.

2. Wilderness Study: The Office assisted the BLM in the completed programmatic review of study areas for California, Utah, and Arizona.

3. Withdrawals: On November 4, 1988, the district court dismissed the National Wildlife Federation (NWF) suit (involving 180 million acres of BLM land) and vacated the 1986 preliminary injunction, on the ground that plaintiff lacked standing. NWF appealed this decision. The Court of Appeals later reversed the dismissal, but did not reinstate the preliminary injunction. The Office recommended that the Solicitor General file a writ of certiorari for Supreme Court review of the standing arguments, and the petition for such writ has been filed.

4. Coal Leasing: The Office met with Bureau State and Headquarters representatives and advised them about implementation of the preference right leasing regulations.

5. Management of Existing Coal Leases: The Office, in conjunction with the Department of Justice, successfully defended BLM's continuing implementation of the readjustment provisions of the Federal Coal Leasing Act Amendments (FCLAA) in a number of cases and settled several more readjustment cases brought regarding the Bureau's underground royalty rate on terms favorable to the Department. This has resulted in a reduction of the royalty amounts owed the Department on readjusted leases. The Office also represented the Bureau before the Interior Board of Land Appeals (IBLA) and in the federal court system on the 10-year readjustment period imposed by the FCLAA for leases in which the Bureau waived its first post-FCLAA readjustment. The Office advised the Bureau on various other issues including the effect of lease suspensions on royalty and rental rates, the 10-year diligence clock, and its effect on the timing of readjustment. Other legal issues on which the Office counselled the Bureau included section 2(a)(2)(A) lessee qualifications and the formation of logical mining units.

6. Coal Leasing Legislation: The Office assisted the Bureau in preparation of testimony, and answering questions regarding legislation introduced in last year's congressional session.

7. Oil and Gas Leasing and National Environmental Policy Act: The Office represented the Bureau before the Interior Board of Land Appeals (IBLA) on National Environmental Policy Act (NEPA) issues associated with applications for permits to drill on existing leases and advised on the level of NEPA analysis necessary before lease issuance. The Office also provided advice regarding protests of oil and gas lease sales for the Bureau's alleged failure to adequately consider environmental effects.

8. Oil and Gas Management: The Office provided extensive advice to BLM regarding drainage issues and represented the Bureau before IBLA on several drainage cases. The Office also advised BLM regarding the period of liability for bonds and the effect of bankruptcy proceedings on federal leases. The Office successfully negotiated several development contract issues with federal lessees.

9. Geothermal and Other Mineral Leasing: The Office advised BLM regarding the Geothermal Steam Act Amendments of 1987 and on other issues associated with geothermal leasing and development.

10. Takings Cases: The Office continued its defense in the Whitney Benefits v. United States and Utah International v. United States coal lease cases in the United States Claims Court. Both cases alleged a taking because of the unsuitability provisions of section 571 of SMCRA. In addition, the Office assisted the Department of Justice in Claims Court cases involving an alleged taking of phosphate preference right lease applications (Kerr-McGee Corp. v. United States) and an alleged taking of patented and unpatented mining claims because of a prohibition against dredge mining contained in the Idaho Wilderness Act (Bear Valley Mining v. United States).

11. Mineral Dormancy Statutes: The Office advised the BLM Eastern States Office about the effect of mineral dormancy statutes in several states.

12. Mining Law Administration: The Office worked with BLM and the U.S. Fish and Wildlife Service on several mine permit applications involving Endangered Species Act issues. The Office counselled BLM regarding adequate NEPA compliance when reviewing such applications.

13. Mining Law Legislation: The Office advised BLM regarding congressional testimony and review of legislation introduced in the last session of Congress.

14. Federal Land Exchange Facilitation Act of 1988: The Office assisted the BLM in drafting revised exchange regulations and in other respects implementing the Federal Land Exchange Facilitation Act, as well as other public land legislation enacted at the end of calendar year 1988.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Hazardous Waste Statutory Implementation: The Environmental Protection Agency's promulgation of final regulations implementing the new amendments to the CERCLA is expected to continue. The Office will monitor the promulgation of these regulations and prepare comments and suggestions where appropriate. The Office will also assist BLM in hazardous waste compliance matters. Where releases occur, the Office will advise BLM on appropriate response actions and will continue to assist BLM in identifying potentially responsible parties, i.e., those parties liable for response costs. The Office will work with the Department of Justice in bringing legal actions necessary to recover response costs and to defend actions against BLM for releases or threatened releases on public lands. BLM will also require guidance to minimize hazardous waste liability where land acquisition is at issue.

2. Wilderness Study: The programmatic review of study areas will continue. The Solicitor's field offices will review environmental impact statements (EIS's) prepared by BLM. Legal activity may increase as recommendations (derived from the fiscal year 1988 EIS's) are given to the Secretary, then to the President, and submitted to Congress.

3. Withdrawals: The Office will continue to provide legal assistance to the Department of Justice in the defense of the National Wildlife Federation (NWF) suit and other suits, if any, that may be initiated because of the 1986 preliminary injunction. The Office continues to advise BLM on issues regarding administration of land programs resulting from the NWF litigation. Also, the

Office will continue to provide advice with regard to military reservation lands and general legal advice with respect to other land withdrawals and public land classifications as well as related legislation and rulemakings.

4. Coal Leasing: The Office will advise BLM on issues related to the ongoing leasing program, including the impact of a pending challenge to the 1982 and 1987 rule amendments (NRDC v. Burford; NWF v. Hodel), the Powder River litigation (No. Cheyenne v. Hodel), and preference right leasing regulations, including the effect of the removal of the prohibition against PRLA processing in wilderness study areas in the Fiscal Year 1990 Appropriations Act.

5. Management of Existing Coal Leases: The Office will continue to advise BLM on readjustment issues, particularly underground royalty rates. Litigation over breaches of lease development obligations may begin as "diligence clocks" on leases issued or readjusted after the Federal Coal Leasing Act Amendments of 1976 run out. Other issues will involve lease suspensions, formation of logical mining units, and section 2(a)(2)(A) qualifications. The Office will continue its defense of pending lease readjustment litigation within the Ninth and District of Columbia Circuits. The Office will continue to assist in the defense of litigation filed over second generation readjustments.

6. Coal Leasing Legislation: The Office will assist BLM in preparing testimony, answering questions and reviewing bills. If legislation is enacted, the Office will advise BLM on its implementation.

7. Oil and Gas Leasing: The Reform Act and BLM's rules issued under it should continue to generate a variety of issues requiring legal advice. Issues and litigation over the lease applications "grandfathered" by the Reform Act, including KGS issues, will require continued attention. The Office will continue to assist BLM in its inspection and enforcement activities on oil and gas leases, on issuance of onshore oil and gas operating orders, on review of lessee compliance with lease obligations and on defining the BLM's authority as lessor.

8. Oil and Gas Leasing and National Environmental Policy Act: The Office will advise BLM on adequate environmental review prior to lease issuance and defend the Bureau's lease sales when protests are filed. NEPA compliance at the lease operation stage will also continue to generate controversy, especially for leases issued within, but prior to designation of wilderness areas.

9. Oil and Gas Management: Lease operations will continue to generate issues concerning drainage, adequate bonding and waste water disposal. BLM's authority to regulate the location of operations will come under scrutiny. The Office will continue to advise BLM on the meaning of unit agreement terms and conditions and on its authority with regard to development contracts.

10. Geothermal and Other Mineral Leasing: Congress has enacted geothermal legislation which will require legal assistance to BLM in the issuance and interpretation of rules. Issues will arise over the effects on significant thermal features. Issues concerning surface utilization facilities on geothermal lease will require analysis. BLM's review of the geothermal operating rules will require legal assistance. The Office will also advise BLM on determining leasable, as opposed to locatable, substances, on operations on non-coal mineral leases and on entitlement to preference right leases.

11. Takings Cases: The Office will continue its defense of several cases filed in the Claims Court for compensation of alleged "takings" of oil and gas or coal leases and for alleged contract breaches. The cases include an alleged taking resulting from the Secretary's 1980 decision to declare certain federal (and state) leases unsuitable for surface operations in an area near Bryce Canyon National Park (Utah International Inc. v. U.S.), an alleged improper rejection of phosphate preference right lease applications (Kerr-McGee Corp. v. U.S.) and a suit over the prohibition on dredge mining that affects both patented and unpatented mining claims (Bear Valley Mining v. U.S.).

12. Mineral Dormancy Statutes: Several states have adopted mineral dormancy statutes which cause mineral estates to expire and re-vest with the surface estate. In many instances, the state forfeiture statute operates to vest mineral estates in the United States as surface owner prior to the date established for the mineral reservation in the original conveyance to the United States. The Office will advise BLM on whether the United States owns the mineral estate on a case-by-case basis.

13. Mining Law Administration: The Office will continue to provide legal representation for BLM in mining claim contests. The Office will assist BLM in preparing and defending adequate NEPA compliance when reviewing plans of operations for unpatented mining claims. The Office will advise BLM on reviewing regulations and patent applications for oil shale mining claims. The Office will also provide legal assistance to BLM in its review and comment on any legislation introduced to amend the mining law or addressing oil shale mining claims.

14. Mining Law Legislation: New legislation is expected to be introduced to amend the Mining Law of 1872 and to include oil shale claims. The Office will continue to advise BLM in its review of and comment on legislation.

15. Mineral Trespass: The Office will assist BLM in identifying instances of trespass on federal minerals. Examples are sand and gravel quarries where the government holds a mineral reservation, exploratory wells drilled without an exploration license, and isolated federal coal removed as part of a mine on adjacent lands.

16. Noxious Weeds Abatement Program: The Office anticipates possible additional litigation in several western states over NEPA issues concerning the BLM's noxious weeds abatement program.

17. High Priced Timber Contracts: Litigation may be filed against holders of defaulted BLM timber contracts for damages resulting from failure to harvest the timber by the contract deadline.

18. Spotted Owl Litigation: The Office expects to continue efforts to defend the BLM position in the spotted owl litigation (Portland Audubon Society, et al. v. Hodel) in the Ninth Circuit. It is expected that additional litigation will be filed in Oregon and California.

19. Wild Horses and Burros: The Office anticipates that BLM will continue to require legal assistance in administering its responsibilities under the Wild Horse and Burro Act, and in defending in litigation brought against this program.

20. Water Rights: The Office expects to be faced with several legal challenges to the Department's ability to acquire water rights under state law to implement stock watering improvements on public lands, particularly in Nevada. The State of Utah may challenge BLM's desire to obtain instream flow water rights for recreation and fish propagation purposes.

21. Environmental Review: BLM's interagency review of its implementation of NEPA and other environmental statutes will continue. The Office will continue to provide legal advice.

22. JY Ranch Exchange: Under consideration is a major exchange of lands in Wyoming which, if acquired, would enhance the Grand Teton National Park, for coal interests of approximate equal value located elsewhere in Wyoming. The Office will continue to advise BLM regarding implementation of this exchange until it is completed.

23. Submerged Lands Act: Litigation concerning the chargeability of acreage in submerged lands to the State of Alaska and native entitlements is expected to continue. Several other suits concerning determinations of navigability for title purposes remain in progress. New litigation has also been filed challenging federal retention of beds of navigable waters at the time of statehood.

24. Revised Statute 2477: Numerous cases have been commenced and many additional suits have been threatened by states and municipalities claiming the existence of rights-of-way under RS 2477. A number of rights-of-way claimed are located within national parks, wildlife refuges and wilderness areas. The Office expects to expend substantial additional time in this area resulting from the recent implementation of the Department's RS 2477 policy.

25. California v. Herrington: The Office will continue to assist the Department of Justice in defense of this litigation challenging the title to two school sections located within the Naval Petroleum Reserve No. 1 and California's attempt to obtain equal monetary value for the sections or fifty percent of the rentals and royalties from oil and gas production since 1976.

26. North Dakota v. Hodel: The Office will continue to assist the Department of Justice in defense of this litigation challenging the title to the bed of the Little Missouri River. Some sections of the riverbed are subject to federal mineral leases.

27. Chippewa Land Claims: BLM has been attempting to resolve tribal claims to lands in the State of Minnesota. This Office has consulted with BIA and tribal attorneys in an attempt to identify those public domain lands over which the reservation boundaries extend and for which the Chippewa have not been compensated.

28. Equal Footing Grants to Alaska: This Office will provide legal advice to the Secretary concerning the legal standards for defining navigable streams and impact of the so-called "Utah Lake" doctrine on lands thought to have been reserved to the United States at statehood. The Office will continue to assist the Department of Justice in related litigation. Within Alaska there are numerous areas upon which a claim can be presented by the United States that submerged lands did not pass to the State at statehood. Each such area may have to be reviewed on its own facts and possibly litigated.

29. Implementation of the Alaska National Interests Lands Conservation Act (ANILCA): A substantial increase in the legal review and defense of subsistence impact studies required by section 810 of ANILCA is anticipated as a result of recent court decisions demanding greater scope and detail in these studies.

30. Implementation of Alaska Native Allotment Act: Numerous cases have been completed and numerous cases begun under the 8000 native allotment applications. There are a wide variety of issues involved including recovery of land improperly conveyed to the State and Native Regional Corporations that were subject to prior claims by native allotment applicants. More than 1500 parcels have already been identified that will have to be recovered from the State.

31. Alaska Railroad Transfer Act: Suits are still pending concerning the proper recipient of railroad lands to be conveyed to the State, to Native corporations, to municipalities, and to public land entrymen.

32. Nuclear Waste Repositories: The Office will advise the BLM on issues arising from Department of Energy efforts to establish defense-related as well as commercial nuclear waste repository sites, especially the Waste Isolation Pilot Project (WIPP) site near Carlsbad, New Mexico. Also, the Office will assist the Department of Justice in any litigation concerning these projects and will continue to represent the BLM in related administrative appeal proceedings. The Office expects continued legal demands through fiscal year 1991.

33. Trans-Alaska Pipeline: This Office will advise the Secretary on legal options for BLM approval of the contingency plan provided annually by Alyeska Corporation in conjunction with the operation of the Trans-Alaska Pipeline System, including the oil tanker traffic. This effort is hoped to reduce the likelihood of another accident like that of the Exxon Valdez.

34. FERC Proceedings: The Office expects to become involved in more jurisdictional disputes with FERC over the assertion by BLM of independent authority under Title V of FLPMA to issue rights of way for FERC hydroprojects located on public lands.

35. Navajo Checkerboard: The Office expects to devote considerable time to assisting BLM and BIA on land use conflicts with Navajo occupants of lands in northwestern New Mexico in connection with ongoing negotiations and litigation.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Implementation of the Alaska National Interest Lands Conservation Act (ANILCA): The Office will continue assisting the BLM in its implementation of ANILCA.

2. Quiet Title Act: The Office will continue to assist in the defense of litigation brought by states against the United States resulting from the recent amendments to the Quiet Title Act. Pending cases include one in California, one in North Dakota, and one in Alaska.

3. Coal Leasing Program: Questions are likely to arise on the issuance of coal leases now that the regional coal teams are not active. The Office will continue providing advice on readjustment and diligence issues. The second generation readjustment litigation will require defense assistance. Preference right leasing will likely generate issues as the Bureau processes the lease applications.

4. Coal Leasing Legislation: The Office will assist BLM in preparing testimony, answering questions and reviewing bills. If legislation is enacted, the Office will advise BLM on its implementation.

5. Oil and Gas Leasing: BLM's leasing regulations will require continued interpretation. Issues are likely to arise concerning lease applications grandfathered by the 1987 Reform Act and by the use of lease stipulations. The Office will continue to assist BLM in its inspection and enforcement activities on oil and gas leases, on issuance of onshore oil and gas operating orders, on review of lessee compliance with lease obligations and on defining the BLM's authority as lessor. Protests to lease sales and to lease operations based on inadequate NEPA compliance by BLM will continue.

6. Geothermal and Other Mineral Leasing: Legal issues concerning geothermal leasing will arise. Combined hydrocarbon leasing may generate issues requiring legal advice. Implementation of the revised solid mineral regulations will raise questions calling for legal counsel. Issues involving oil shale and other synthetic fuels may arise if interest in these energy sources is renewed.

7. Takings Cases: The Office expects decisions or settlement in some of the pending Claims Court cases where plaintiffs allege a taking or a breach of contract related to minerals or mineral leases. Legal assistance will continue through fiscal year 1992.

8. Mining Law Administration: Mining law issues are of a continuous nature. New contests are filed every year and unresolved contests require attention through final judicial review. The Office will provide advice to BLM on NEPA compliance and RCRA/CERCLA liability as new issues arise and as old issues are resolved by the courts. Finally, Congress may enact new legislation which will generate a new set of issues without necessarily ending the existing issues.

9. Other Mineral Issues: BLM's mineral programs will require continued advice on the effect of legislation on lease and claim operations, including defense of takings cases. Mineral dormancy and mineral trespass will require continued attention by the Office.

10. NEPA and Oil and Gas Leasing: The Office expects continued controversy over NEPA compliance in the oil and gas leasing program. In addition, there may be challenges to the adequacy of the treatment of oil and gas in BLM's resource management plans.

11. Hazardous Waste Statutory Implementation: As BLM identifies and characterizes more landfill, mining and milling sites that need to be cleaned up under CERCLA, the Office will work with BLM to meet its Federal Facility statutory requirements under section 120. The Office will continue to advise BLM on other aspects concerning the implementation of other requirements imposed by CERCLA and RCRA and will review and coordinate responses to proposed rules promulgated by the Environmental Protection Agency to implement CERCLA and RCRA.

12. Oil and Gas Leasing in Artic National Wildlife Refuge: If legislation is enacted on oil and gas leasing in the Arctic National Wildlife Refuge, the Office will assist BLM in identifying and fulfilling its role under the new law.

13. Equal Footing Grants to Alaska: Additional issues are expected to arise in the application of the "Utah Lake" doctrine and the legal standards of navigability in determining ownership of lakes, river beds, and offshore areas particularly in Alaska. This Office will continue to provide legal advice to the Secretary and the BLM to assist in resolving land disputes with states.

14. Withdrawals: The Office will continue to provide advice with regard to military reservation lands and general legal advice with respect to other land withdrawals and public land classifications as well as related legislation and rulemaking.

15. Trans-Alaska Pipeline: The Office will continue to provide advice on BLM's approval of the pipeline system contingency plans.

BUREAU OF RECLAMATION
Client

BASE ACTIVITIES:

The Bureau of Reclamation (Bureau) is responsible for water resource project planning, construction, contracting, repayment, and operation and maintenance; hydropower development; water research and technology; water policy; and water rights. A number of organic statutes, including the Reclamation Act of 1902 and acts amending and supplementing it, most recently the Reclamation Reform Act of 1982, and amendments to that Act in December of 1987, are involved, as are numerous project authorization statutes. The Bureau's activities require interpretation of these statutes, and other statutes related to water projects, including the National Environmental Policy Act, the Endangered Species Act, the Fish and Wildlife Coordination Act, the Clean Water Act, state water rights laws, the Flood Control Act of 1944, and the Federal Power Act.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Reclamation Reform Act: The Office continued to advise the Bureau as it implemented the rules and regulations covering the Reclamation Act of 1902, as amended by the Reclamation Reform Act of 1982 (RRA). A major issue resolved this fiscal year related to a proposed sale and trust arrangement involving a large California farming operation. Other issues related to the RRA were resolved.

2. Friant Contracts: The Office produced a major memorandum concerning environmental compliance in the renewal of Friant Unit contracts and has assisted in the renegotiation of the first contract to expire.

3. Leadville Drainage Tunnel: The Office assisted the Bureau in preparing a legislative package to send to Congress to seek authorization for construction of the treatment plant. Congress appropriated funds to construct the treatment plant. In addition, the Office has assisted the Bureau in defending against a suit challenging the agency's compliance with its NPDES permit.

4. Distribution of Revenues: A memorandum addressing the proper distribution of mineral leasing revenues was issued.

5. Water Rights Transfer and Obligations Issues: The Office prepared a memorandum which concluded that the United States is obligated to make filings in general stream adjudications for Reclamation projects' water rights held in the name of the United States in order to protect the projects' ability to deliver water to project water users.

6. Reclamation Reform Act "Blue Book": A reference work containing annotations, references, regulations and relevant Solicitor's Opinions and Commissioner's Instruction Memoranda construing the Reclamation Reform Act of 1982 and its amendments was prepared by the Office and is now available for the guidance of the client and practitioners in the field.

7. Reclamation Law "Blue Books": Volume IV and Supplement I to the multi-volume legal reference work entitled "Federal Reclamation and Related Laws Annotated" were published and are available for use by client and other federal agencies, the Congress, state and local agencies, the water user community and legal practitioners.

8. Weber Basin Project: The Office provided the Bureau with guidance as to the application of the Emergency Funds Act of 1948 and the determination of the correct interest rate as provided by the Reclamation Projects Act of 1939 as opposed to the Water Supply Act of 1958.

9. Indian Water Rights Settlement: Significant efforts were put into assisting the Office of the Secretary in its review of the Salt River Pima-Maricopa Indian Community Water Rights Settlement where several parties in Arizona have agreed to a complex transfer of water rights to the community, and Congress enacted legislation in October 1988, ratifying the settlement and authorizing the Secretary to sign it. The Secretary signed the settlement in September 1989.

10. Fees: The Office responded to a request by the Bureau for an opinion regarding the payment of fees to state administrative agencies for acquisition of water rights and also for permits to install and maintain underground storage tanks.

11. Navajo Generating System: The Office advised the Department and the Bureau concerning Clean Air Act visibility standards for Class I areas. The Navajo Generating System, in which the Bureau is a 24.3 percent participant, is the subject of a lawsuit involving winter haze in the Grand Canyon, Environmental Defense Fund v. Thomas (N.D. Cal.). The Office prepared several opinions related to the United States' obligations, if any, with respect to the Navajo Generating System.

12. Stillwater Wildlife Management Area Water Transfer: The Office continued to assist the Department and the Bureau of Reclamation by responding to questions under federal and Nevada law relating to the transfer of and acquisition of water rights for wildlife uses at Stillwater Wildlife Management Area. The Office prepared an opinion on the legal authorities related to specific transfer to the Management Area.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Reclamation Reform Act: The Office continues to advise the Bureau as it implements the rules and regulations covering the Reclamation Act of 1902, as amended by the Reclamation Reform Act of 1982 (RRA). The Office helps to interpret the rules and underlying statutes, and assists in the renegotiation of existing contracts, negotiation of new and amended contracts, and examination of ownership arrangements. The Office also continues to work closely with the Department of Justice on litigation challenging the RRA rules (NRDC v. Duvall), and on the initiation of additional litigation to enforce the certification, reporting and other provisions of the RRA. The Office continues to defend on appeal a constitutional challenge to section 203(b) of the RRA. The Office continues to assist the Bureau in auditing water recipients whose

landholdings or operations exceed 960 acres as required by the RRA. The Office is actively involved in implementing the Bureau's policy of imposing full cost charges on water users who failed to file certification and reporting forms.

2. Power Development: Development of hydropower potential at Bureau facilities continues. The Office continues to provide legal support by reviewing legislation, assisting in the development of a uniform policy on the authority of the Federal Energy Regulatory Commission (FERC) to issue permits and licenses on Reclamation projects, and providing agency counsel for administrative hearings. In addition, the Office continues to work with FERC to resolve jurisdiction issues between FERC and the Bureau.

3. Central Valley Project (CVP): The Bureau is implementing the reauthorization of the CVP contained in the Coordinated Operating Agreement (COA) legislation passed in October 1986 and is attempting to resolve Sacramento-San Joaquin Delta water issues. Increased legal advice will be required to implement the California Supreme Court's decision in the Delta water cases and integrate that decision in the "Term 80" study initiated by the State Water Resources Control Board on reallocation of water supplies in the Sacramento-San Joaquin River Basins and the proposed protection of San Francisco Bay. In addition, this Office is assisting the Bureau in its environmental compliance with regard to proposals to market uncommitted water from the CVP. (Contra Costa v. U.S.)

4. San Luis Drain, San Luis Unit, Central Valley Project: The Office continues to assist the Assistant Secretary and the Bureau in resolving the complex issues associated with reauthorization of the San Luis Unit, implementation of the Westlands settlement and environmental problems affecting the San Luis Drain and Kesterson Reservoir. The Office continues to assist the Department in complying voluntarily with the cleanup Orders of the State Water Resources Control Board. The Bureau is also currently participating in the renegotiation and replacement of contracts for long-term water service, distribution, and drainage system repayment. The Office will provide legal advice and opinions, participate with the Bureau in contract negotiations, and review legal options in dealing with the selenium and other drainage issues. The Office is working with the Bureau and the Department of Justice to implement the terms of settlement agreements reached in NRDC v. Hodel; Claus v. U.S. and Schwab v. U.S..

5. San Joaquin Basin Resource Management Initiative: The Office will provide legal advice to the Bureau in its implementation of the Secretary's San Joaquin River Basin Management Initiative and environmental studies thereunder. As friant contracts expire, the Office continues to assist the Bureau in negotiating the terms of renewal contracts by answering legal questions arising from the negotiations. The Office continues to assist the Department of Justice on the litigation challenging the renewals (NRDC v. Hancock).

6. Animas-LaPlata Unit: The Office continues to provide legal assistance concerning implementation of the agreement on cost sharing and water rights settlement, and implementation of the 1988 legislation.

7. Colorado River Water Marketing: The Office continues to review and provide legal advice to the Department and the Bureau concerning proposals by Imperial Irrigation District and others to conserve and market federally supplied Colorado River water pursuant to State law and assist the Department of Justice and the parties in resolving the issues that occasioned the filing of a lawsuit on February 1, 1989 by Coachella Valley Water District to invalidate and enjoin implementation of the Water Conservation Agreement entered into by Imperial Irrigation District and the Metropolitan Water District of Southern California on January 17, 1989.

8. Colorado-Big Thompson (C-BT) Project: The Office continues to assist in the negotiation and drafting of water service contracts and to provide legal advice on proposed transfers and exchanges involving water stored in Green Mountain Reservoir and the formulation of appropriate arrangements providing for use of C-BT facilities by the Windy Gap Project.

9. Colorado River Operations: The Office expects additional lawsuits to be brought directly and indirectly challenging the Bureau's operations of projects and facilities on the Colorado River such as those in Laughlin River Tours v. Bureau of Reclamation (D. Nev.) (low flows affecting riverboat tours) and Gasser v. U.S. (Fed. Cir.) (flooding that resulted in the taking of a permanent flowage easement to land in Mexico). The Office will assist the Department of Justice in litigating those cases and continue to provide legal advice concerning operating criteria, annual operating plans and the Glen Canyon environmental impact statement.

10. Garrison Diversion Unit: The Office continues to provide legal assistance to the Department in analyzing, interpreting, and implementing the Garrison Diversion Unit Reformulation Act of 1986, including among other things, the municipal, rural, industrial and Indian irrigation systems, the James River studies, alignment of the Sykeston Canal, and the applicability of the "swampbuster" provisions of the Food Security Act of 1985 to project lands. This assistance involves preparation and review of correspondence, legal opinions, reports, contracts, and environmental impact statements.

11. Central Utah Project (CUP): The Office continues to provide support to the Bureau in its construction of the final phases of the Bonneville Unit of the CUP including land acquisitions, procurement contract challenges and in interpretation and application of the final CUP authorization bill now before Congress (expected passage FY 1990). Further, the Office continues to assist the Department in attempting to resolve the repayment problems of the Uintah Water Conservancy District.

12. Arizona Water Issues: The Bureau is continuing to work with the State of Arizona to resolve its problems. The Office is participating in the task force established to resolve Indian water right matters. Meetings are being held with the Bureau and other Department policy makers, Indian tribes, and the State and local entities concerned in both completing the CAP and resolving conflicts among the water users. The Office continues to assist in drafting and reviewing contracts, legislation and defending litigation, (e.g., Maricopa Audubon Society v. Hodel). The Office also assisted the Bureau in implementing the initial and supplemental cost-sharing agreements and in negotiating and drafting an amendatory master repayment contract with the Central Arizona Water

Conservation District and will continue to assist in defending litigation challenging that contract (Central Arizona Irrigation and Drainage District, et al. v. Lujan, et al.).

13. Water Marketing/Transfers: Implementation of the Department's policy initiatives on water marketing and water transfers involving Bureau facilities, in coordination with a similar initiative from the Western Governors' Association, may necessitate a review of federal and state laws involving water rights and allocations. The Office continues to review proposed actions for legal sufficiency.

14. Water Litigation: The Office continues to provide legal assistance to the Bureau and the Department of Justice in defense of litigation brought against the Bureau and in aid of actions initiated to enforce reclamation laws.

15. Hazardous Waste Statutory Implementation: The Office is monitoring promulgation by the Environmental Protection Agency of regulations implementing new amendments to the Resource Conservation and Recovery Act and Superfund, and preparing comments and suggestions where appropriate. The Office is also assisting the Bureau in hazardous and toxic waste compliance matters including asbestos problems in Arroyo Pasajero. Where releases occur, the Office is advising the Bureau on appropriate response actions and is assisting the Bureau in identifying potentially responsible parties, i.e., those parties liable for response costs. The Office is working with the Department of Justice in bringing legal actions necessary to recover response costs and to defend actions against the Bureau for releases or threatened releases on Reclamation administered lands. The Office will be assisting the Bureau in its implementation of Secretarial Order No. 3127 which sets up the procedures for performing surveys for hazardous waste for lands slated to be acquired by the Bureau. This area has been cited as a major priority by the Bureau and will result in a substantial increase in workload for the Office.

16. Hazardous Waste, Sanitary Landfills and Open Dumps Liability Policy: The Office is assisting the Bureau in implementing a comprehensive policy to reduce both the risk and federal liability for the dumping of hazardous waste into sanitary landfills and open dumps.

17. Hoover Dam: The Office is assisting the Bureau in negotiating a contract with the Western Area Power Administration, the Arizona Power Authority and the Colorado River Commission of Nevada for development of the Hoover Powerplant Modification Project.

18. All American Canal Lining: The Office is assisting the Bureau in its efforts to achieve the lining of the All American Canal. Legal assistance will continue in fiscal year 1991.

19. Leadville Drainage Tunnel: The Office is continuing to assist the Bureau in attempting to comply with its NPDES permit by reducing contaminant levels in water from the Leadville Drainage Tunnel in Colorado. The Sierra Club has sued the Bureau for failure to comply with the NPDES permit. The Office is assisting the Department of Justice in this litigation.

20. Fryingpan-Arkansas Long-Term Water Storage and Exchange Service: The Office continues to assist the Bureau in contract negotiations related to marketing water storage and water exchange services in the Fryingpan-Arkansas Project's East Slope storage system.

21. Bureau of Reclamation Reorganization: The Office continues to provide legal assistance to the Bureau in establishing and implementing such new program priorities as system optimization/joint use, water quality/environmental restoration and enhancement, groundwater management, non-federal system operation, research, toxic cleanup and Superfund and transfer of facilities.

22. Irrigation Drainage: The Office workload is expected to increase as the Bureau and the multi-agency task force move from the study phase into recommendations for correcting irrigation-induced water quality problems Westwide and implementation thereof.

23. Distribution of Revenues: The Office continues to assist the Bureau in its review of the distribution of revenues from reclamation projects. A task force has been formed to address these issues and the Office is assisting the task force with answers to legal questions.

24. Water Rights Transfer and Obligations Issues: The Office continues to assist the Bureau by responding to questions under federal and state law relating to transfers of water rights.

25. Elephant Butte Irrigation District v. Reynolds (3d Jud. Dist., N.M.): The Office expects a significant expansion of the issues being litigated in this general adjudication of water rights in the Rio Grande Stream System from Elephant Butte Dam south to the Texas state line. The Bureau is developing and analyzing data relating groundwater drawdown to the water available to the District. The Office will advise the Bureau on its legal obligations and assist the Department of Justice in defending the action.

26. Pick-Sloan Missouri Basin Program (P-SMBP): In light of the Supreme Court's February 23, 1988 decision in the ETSI case and the Department of the Army's decision not to ratify existing Bureau contracts for industrial water service out of the Missouri River mainstem reservoirs, the Office continues to assist the Department in terminating those contracts and seeking a new or continuing role in industrial water marketing. The Office will also assist the Department in evaluating and responding to proposals to change the basis for P-SMBP cost allocations from "ultimate development" to "current use."

27. North Platte River Water Rights Litigation (Nebraska v. Wyoming; Wyoming v. U.S.; Jess v. West; Goshen Irrigation District v. U.S., et al.): The Office is advising the Department and assisting the Department of Justice in representing the interests of the Department in these cases, which involve several Bureau and state projects and other departmental interests.

28. Drought Measures: The Office is responding to legal issues raised by efforts on the part of Congress, and state and federal agencies to respond to drought emergencies, including implementation of the 1988 legislation.

29. Indian Water Rights Settlement: Several of the provisions of the Salt River Pima-Maricopa Indian water rights settlement become effective during fiscal year 1990. The Office continues to assist in negotiations of water rights settlements of Indian claims and implementation of congressionally approved settlements, such as San Luis Rey and Animas La Platta. The Office expects to be involved in the Fort McDowell Indian Community Water Rights Settlement (Arizona) in a manner similar to its involvment in the Salt River settlement. In addition, the Office anticipates significant congressional action in the upcoming session of Congress, requiring extensive review of proposed legislative settlements.

30. Indian Trust Responsibilities: The Office continues to advise the Bureau with respect to how the Department's trust responsibilities toward Indian tribes should be construed in the context of the Bureau's mission. This activity will continue through fiscal year 1991.

31. Jicarilla Apache Tribe v. United States: The Office continues to participate in, and provide legal advice to, the Department's negotiating team regarding the settlement, water delivery contracts, and other settlement documents. Once approved by Congress, this Office will assist the Bureau in implementing the settlement.

32. Kansas v. Colorado: The Office is assisting the Department of Justice in this original action filed in the Supreme Court to protect the Bureau's interest in the winter storage aspect of this case.

33. State Regulation of Water Quality Impacts: The Office is continuing to represent the Bureau in various state and administrative proceedings as states attempt to control the impact of Bureau operations on water quality. In light of the precedential implications, this Office expects the issue to continue to demand extensive attention.

34. General Stream Adjudications: The Bureau is involved in ongoing adjudications and settlement negotiations of water rights in a majority of the Western states. In the Snake River adjudication in Idaho, several federal reclamation project water rights claims were filed by the Bureau. However, the filing has been challenged because of a conflict concerning whether the United States is required to pay the fees imposed under Idaho law for such claims. The Office is monitoring the challenge to the Idaho fees.

35. National Environmental Policy Act and Other Environmental Laws: The Office continues to advise the Bureau with respect to compliance with the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the Resource Conservation and Recovery Act, CERCLA and other environmental protection laws. This activity will continue through fiscal year 1991.

36. GAO Bid Protests: The Office represents the Bureau in bid protests, often involving multi-million dollar contracts which are components of major bureau programs such as the Central Arizona Project. Protests can have major impacts on these projects in terms of time lost and additional costs. In addition to advising the Bureau on the protests themselves, the Office often must work with the Bureau in drafting determinations to award the contract or to continue contract performance during the pendency of a protest.

37. Navajo Generating Station: The Office expects an increased workload in connection with advising the Department and the Bureau concerning Clean Air Act visibility standards for Class I areas. The Navajo Generating Station, in which the Bureau is a 24.3 percent participant, is the subject of a lawsuit involving winter haze in the Grand Canyon, Environmental Defense Fund v. Thomas, (N.D. Cal.).

38. Stillwater Wildlife Management Area Water Transfer: The Office continues to assist the Department and the Bureau by responding to questions under federal and Nevada law relating to the transfer of and acquisition of water rights for wildlife uses at Stillwater Wildlife Management Area.

39. Truckee and Carson Rivers: The Office will continue to provide support to the Department, the Bureau and the Department of Justice regarding litigation and settlement initiatives on the Truckee and Carson Rivers, including the Newlands Project, Washoe Project, Pyramid Lake and the Stillwater Wildlife Management Area.

40. Federal Technology Transfer Act: The Office is providing advice and counsel to the Bureau on questions arising from implementation of this Act and on issues surrounding the right to inventions conceived by small business firm and non-profit organizations.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Reclamation Reform Act: The Office expects its work to increase in connection with implementation of rules and regulations, auditing of water recipients, negotiation, drafting and review of repayment and water service contracts, and offensive and defensive litigation. In addition, the Office will continue to review, revise and provide legal advice concerning legislation to amend such organic Reclamation laws as the Warren Act and the Rehabilitation and Betterment Act.

2. Power Development and Operations: The Office will continue to assist the Bureau by: providing legal opinions; drafting and reviewing legislation, regulations and contracts; reviewing, advising on and participating in Federal Energy Regulatory Commission actions; and assessing the effects of changes in project operations.

3. Litigation: The Office will continue to assist the Department, the Bureau and the Department of Justice in connection with water rights adjudications and litigation brought by and against the United States involving organic Reclamation law and project authorizations.

4. Irrigation Drainage: The Office workload will continue to increase as the investigation into irrigation-induced water quality problems moves from recommendations to implementation of corrective actions, including negotiating and drafting inter-agency agreements and legislation authorizing a revolving O&M fund.

5. Bureau of Reclamation Operations: The Office expects to assist the Bureau in implementing new and modified policies on operation and maintenance activities and funding and land resources management.

6. Federal Energy Regulatory Commission Licensing/State Law: The Office expects an increased workload in connection with advising the Department on the role and effect of state water laws in FERC hydropower licensing actions.

7. GAO Bid Protests: Continued bid protests and injunctive litigation are contemplated.

8. Drought Measures: The Office will continue to respond to legal issues regarding the Bureau's authority to respond to drought emergencies.

9. Hazardous Waste: The Office will continue to assist the Bureau in meeting hazardous waste responsibilities, including bringing when appropriate, claims to recover damages for injuries to natural resources under the Bureau's management caused by releases of hazardous wastes.

10. Garrison Diversion Unit: The Office will continue to provide legal assistance to the Department in analyzing, interpreting, and implementing the Garrison Diversion Unit Reformulation Act of 1986.

11. Revenue Distribution: The Office will continue its legal review of statutes governing revenue distribution from Bureau projects, public lands, and hydropower projects.

12. San Joaquin River Basin Resource Management Initiative and Other CVP Related Issues: The Office will continue to provide legal advice in support of the Initiative and contract renewal (and related litigation) and in support of plans to contract for uncommitted yield of the CVP.

13. Indian Water Rights Settlements: The Office will continue to work on several of the provisions of the Salt River Pima-Maricopa Indian water rights settlement that became effective during fiscal year 1990. The Office will continue to assist in implementing those provisions and provisions of other Indian water rights settlements, and participate in negotiations.

14. General Stream Adjudications: The Office will continue to address legal issues associated with the general stream adjudications in the western states.

15. North Platte River Water Rights Litigation (Nebraska v. Wyoming; Wyoming v. U.S.; Jess v. West; Goshen Irrigation District v. U.S., et al.): The Office expects an increased workload in the term of research, discovery, preparation of documentary and testimonial evidence and briefing as this action by Nebraska to enforce the Supreme Court's 1945 equitable apportionment decree proceeds to trial.

16. Water Marketing: As part of an expected increase in the number and variety of proposals calling for Departmental participation in water marketing and transfer activities, this Office will continue to assist the Department in determining its proper role as "watermaster" of the Colorado River with respect to proposals to conserve and market federally supplied water pursuant to State law.

17. Administration of Reclamation Units: The Office will continue to assist the Bureau in administering the various reclamation units by answering legal questions related to operations, contracts, water marketing and other aspects of the projects.

18. Elephant Butte Irrigation District v. Reynolds (3d Jud. Dist., N.M.): The Office will continue to advise the Bureau on its legal obligations and assist the Department of Justice in defending the action.

19. Colorado River Operations: The Office will continue to assist the Department of Justice in litigating cases relating to Colorado River Operations.

20. Pricing: The Office will be investigating, as required, the legal limits on the Bureau's discretion in setting the price charged to water users for delivery of project water.

21. Fees: The Office will be closely monitoring and assisting in the litigation of fee issues in general stream adjudications.

22. Navajo Generating Station: The Office expects to continue advising the Bureau as to any Clean Air Act responsibilities with regard to the Navajo Generating Station.

23. Newlands Project, Pyramid Lake/Stillwater: The Office will continue to have significant work in advising and defending the Bureau on issues arising from the Newlands Project, Pyramid Lake and the Stillwater Management Area.

24. Federal Technology Transfer Act: The Office will continue to provide advice on the implementation of this Act and on questions of rights to inventions.

MINERALS MANAGEMENT SERVICE

Client

BASE ACTIVITIES:

The Minerals Management Service (MMS) requires legal advice on compliance with the following acts and implementing regulations: The Outer Continental Shelf Lands Act, the Submerged Lands Act, the Mineral Leasing Act and other mineral leasing laws onshore, the Alaska Native Claims Settlement Act, the Federal Oil and Gas Royalty Management Act (FOGRMA), the Coastal Zone Management Act, the Endangered Species Act, the National Environmental Policy Act, and the Natural Gas Policy Act. Major areas of legal advice include leasing of and operations on Outer Continental Shelf (OCS) lands, management of revenues from the leasing of Indian lands and of federal lands both onshore and offshore, and domestic and international offshore boundaries.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. OCS Five-Year Leasing Program: On December 30, 1988, the D.C. Circuit refused to grant relief requested by environmental groups and certain coastal states to enjoin or vacate the OCS Five-Year Leasing Program. The Office advised MMS as it prepared a draft supplemental environmental impact statement on migratory species. The Office also advised MMS as it prepared for the 1992-1997 program.

2. Oil and Gas Lease Sales: The Office reviewed for compliance with the National Environmental Policy Act, OCS Lands Act, and the Endangered Species Act, all proposed actions involving three OCS oil and gas lease sales. The Office assisted the Solicitor General in opposing the petition for certiorari filed against the decision in Akutan v. Hodel.

3. Royalty Collection: Continued implementation of the Federal Oil and Gas Royalty Management Act and other mineral leasing laws through audits and demands for additional royalty payments required defense in the Department's Office of Hearings and Appeals and the courts. This required defense of legal rationales in untested areas. The Office assisted MMS in meeting its enforcement objectives for cases of late, under, or non-payment of royalties.

4. Oil and Gas Valuation Regulations: The Office provided legal assistance to MMS in its effort to streamline and revise existing regulations governing the determination and collection of royalties from oil and gas production on federal and Indian lands and the OCS. The Office reviewed a proposed rulemaking on "percent-of-proceeds" gas sales contracts and assisted MMS in developing draft proposal regulations to revise the dual accounting requirements and to revise the benchmarks for valuing gas not sold pursuant to an arm's-length contract.

5. Alaska Gas Valuation: The Office continued its efforts in litigation with Marathon Oil Company over valuation of gas production from the Kenai Field in Alaska, involving both LNG feedstock gas and so-called rental gas. Marathon filed a lawsuit challenging the Interior Board of Land Appeals' decision assessing Marathon $10.2 million in LNG royalties.

6. OCS Plan Approvals: The Office defended challenges to OCS plans of exploration and plans of development and production. The Office assisted MMS in commenting on four appeals that OCS lessees have filed with the Secretary of Commerce under the Coastal Zone Management Act.

7. Royalty Audits: The Office defended MMS in audits of lease accounts to assure that the proper royalty has been paid. Of special importance to this effort was our defense of suits claiming that our payment orders were barred by a statute of limitations.

8. Royalty Management Operations: The Office assisted the MMS in implementing assessment, penalty, collection, distribution and other procedures under the Federal Oil and Gas Royalty Management Act and regulations, and provided legal advice on other related fiscal issues.

9. OCS Air Quality Rules: The Office assisted MMS in drafting proposed regulations for activities off California. Proposed rules were published on January 17, 1989 (54 Fed. Reg. 1,846).

10. Representation before the Interior Board of Land Appeals: The Office defended MMS decisions in 60 appeals filed with the Interior Board of Land Appeals.

11. MMS Director's Decisions: The Office continued to review and assist in dozens of appeals from MMS decisions rendered by MMS field offices. The royalty decisions, which are becoming more numerous, involve billings against lessees, often in the millions of dollars. The Office's legal assistance will resolve a growing number of oil, gas and coal royalty appeals.

12. Offshore Boundary Litigation: The Office provided legal support to the Department of Justice in suits before the United States Supreme Court over the state-federal offshore boundary off Alaska and Mississippi.

13. Coal Valuation Litigation: The Office defended MMS in litigation over coal royalty valuation resulting from readjustment of coal leases from cents per ton to ad valorem royalty requirements. It obtained a favorable ruling for $5 million in Arch Minerals.

14. Hard Mineral Lease Sales: The Office assisted MMS as it coordinated a possible cobalt OCS lease sale with Hawaii and a possible gold OCS lease sale with Alaska. Draft environmental impact statements were published for both sales.

15. Hard Mineral Leasing and Operations Rules: The Office assisted MMS as it revised rules for hard mineral leasing and operations on the OCS.

16. Section 10 Regulations: The Office assisted MMS in formulation and drafting regulations to implement section 10 of the Outer Continental Shelf Land Act, which limits MMS' refund authority for OCS leases. MMS published the rules in January 1989.

17. Section 10 Litigation: The Office assisted the Department of Justice in defending challenges to the Department's interpretation of the refund limitations of section 10 of the OCS Lands Act. Several suits are pending in the Claims Court.

18. Royalty on Gas in Marketable Condition: The Office assisted MMS and the Department of Justice in defending against challenges to MMS regulations requiring royalty on gas in marketable condition with no deduction for so-called "post-production costs" incurred by lessees.

19. President's Task Force: The Office advised the Executive Director of the Task Force on OCS Development on the lawfulness of options to be presented to the President.

20. Indian Royalties: The Office defended challenges to MMS orders requiring additional royalties on Indian mineral leases.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Oil and Gas Lease Sales: The Office will review for compliance with the National Environmental Policy Act, OCS Lands Act, and the Endangered Species Act, all proposed actions involving several OCS oil and gas lease sales.

2. Royalty Collection: Implementation of the Federal Oil and Gas Royalty Management Act will require defense in the Department's Office of Hearings and Appeals and the courts of challenges by lessees to MMS demands for royalty collections. This will require defense of legal rationales in untested areas. The Office will assist MMS in meeting its enforcement objectives for cases of late, under, or non-payment of royalties. The new rules and programs include offshore lease-site security plans, the states' role in onshore lease inspection and royalty collection, and a much revised penalty system for nonpayment or late payment of royalty from OCS, onshore and Indian leases. The Office will have substantial work defending royalty collection in disputes under gas valuation regulations. Another principal royalty collection issue invokes royalties due on so-called "post-production" cost reimbursements.

3. OCS Plan Approvals: The Office will continue to defend challenges to OCS plans of exploration and plans of development and production. The Office anticipates extensive work on exploration plans for drilling off North Carolina and Alaska.

4. Royalty Management Operations: The Office will continue to assist the MMS in implementing assessment, penalty, collection, distribution and other procedures under the Federal Oil and Gas Royalty Management Act and regulations, and provide legal advice on other related fiscal and operational issues.

5. OCS Air Quality Rules: The Office will continue to review rulemaking documents and to defend MMS in any litigation challenging the Department's decision on the rules.

6. Coal Product Value Regulations: The Office has assisted MMS in reviewing the final 1989 rules for valuing royalty on coal. The Office will advise MMS as it promugates revised rules.

7. Representation before the Interior Board of Land Appeals: The Office will continue to defend MMS decisions appealed to the Interior Board of Land Appeals.

8. MMS Director's Decisions: The work described for fiscal year 1989 will continue.

9. Offshore Boundary Litigation: The Office will continue to provide legal support to the Department of Justice in suits before the Supreme Court over the state-federal offshore boundary off Alaska. The Office has obtained Mississippi's agreement to a proposal to settle Mississippi v. United States.

10. Coal Value Litigation: The Office will continue to defend MMS in litigation over coal royalty valuation resulting from readjustment of coal leases from cents per ton to ad valorem royalty requirements.

11. Hard Mineral Lease Sale Planning: The Office will assist MMS as it studies possible lease sales of hard minerals on the OCS.

12. Alaska Gas Valuation: The Office assisted MMS in setting litigation involving MMS' orders to collect additional royalty on gas production from the Kenai Field in Alaska, and the related civil penalty litigation.

13. Indian Royalties: The Office will defend challenges to MMS orders requiring additional royalties on Indian mineral leases.

14. Development of Common Reservoirs: The Office will continue to advise MMS on options to regulate development of oil and gas reservoirs underlying the State-Federal offshore boundary.

15. United States/Canada Boundary Issues: The Office will advise MMS and the State Department on issues concerning the disputed United States/Canada boundary in the Beaufort Sea.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Oil and Gas Lease Sales: The Office will continue to review for compliance with the National Environmental Policy Act, OCS Lands Act, and the Endangered Species Act, all proposed actions involving several OCS oil and gas lease sales.

2. Royalty Collection: The work described for fiscal year 1990 will continue.

3. OCS Plan Approvals: The Office will continue to defend challenges to OCS plans of exploration and plans of development and production. The Office anticipates extensive work on exploration plans for drilling off North Carolina and Alaska.

4. Royalty Management Operations: The Office will continue to assist the MMS in implementing assessment, penalty, collection, distribution and other procedures under the Federal Oil and Gas Royalty Management Act and regulations, and provide legal advice on other related fiscal and operational issues.

5. OCS Air Quality Rules: The Office will continue to review rulemaking documents and to defend MMS in any litigation challenging the Department's decision on the rules.

6. Coal Product Value Regulations: The Office will defend any litigation brought against the final rules for valuing royalty on coal.

7. Representation before the Interior Board of Land Appeals: The Office will continue to defend MMS decisions appealed to the Interior Board of Land Appeals.

8. MMS Director's Decisions: The work described for fiscal year 1989.

9. Offshore Boundary Litigation: The Office will continue to provide legal support to the Department of Justice in suits before the Supreme Court over the State-Federal offshore boundary off Alaska.

10. Coal Value Litigation: The Office will continue to defend MMS in litigation over coal royalty valuation resulting from readjustment of coal leases from cents per ton to ad valorem royalty requirements.

11. Hard Mineral Lease Sale Planning: The Office will continue to assist MMS as it studies possible lease sales of hard minerals on the OCS.

12. Alaska Gas Valuation: The Office will continue its defense of MMS' orders to collect additional royalty on gas production from the Kenai Field in Alaska, and the related civil penalty litigation.

13. Indian Royalties: The Office will continue to defend challenges to MMS orders requiring additional royalties on Indian mineral leases.

14. Development of Common Reservoirs: The Office will continue to advise MMS on options to regulate development of oil and gas reservoirs underlying the State-Federal offshore boundary.

15. United States/Canada Boundary Issues: The Office will continue to advise MMS and the State Department on issues concerning the disputed United States/Canada boundary in the Beaufort Sea.

GEOLOGICAL SURVEY
Client

BASE ACTIVITIES:

The U.S. Geological Survey (USGS) is confronted with legal challenges in the implementation of its research and contracting authority related to water resources, geologic investigations, responsibilities under the Barrow Gas Field Transfer Act, under the equal opportunity laws, and regulations authorized by the Acts. In addition, legal advice is provided relating to USGS responsibilities for assessing the Nation's mineral and energy resources and water power potential; investigating natural hazards and conducting the National Mapping program. Other major fields of legal advice and review include contract disputes related to the NPR-A and contract research done by the Water Resources and Geologic Divisions, and intellectual property rights. The Office also reviews patent infringement claims, determines the rights of contractors to inventions funded in part with public money, and advises on tort and employee claims and general legal problems arising from Bureau operations.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Husky Oil NPR Operations, Inc.: The United States filed suit against the State of Alaska contesting the assessment of its corporate income tax on Husky. Oral argument on a motion for summary judgment was held. The State brought an enforcement action in state court for the assessed taxes. Based on advice from the Office, the Survey paid, under protest, the tax assessed by the State.

2. The Federal Technology Transfer Act of 1986: Legal assistance was provided in implementing the provisions of this law.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Water Rights Negotiations: Assistance from the USGS will be needed in a major program to negotiate federal and Indian water rights. Legal assistance will be required to develop the hydrologic programs in a manner that will satisfy the legal requirements of state and federal law for proof and support of water right claims.

2. The Federal Technology Transfer Act: The Office is providing advice and counsel to the Geological Survey on questions arising from implementation of this Act and on issues surrounding the right to inventions concerned by small business firms and non-profit organizations.

3. Husky Oil NPR Operations, Inc: The Office is optimistic about a settlement of the litigation of the State of Alaska's assessment of corporate income tax on Husky.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. The Federal Technology Transfer Act: The Office will continue to provide advice on the implementation of this Act and on questions of rights to inventions.

OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT
Client

BASE ACTIVITIES:

The Solicitor's Office provides legal support to the Department in fulfilling federal responsibilities under the Surface Mining Control and Reclamation Act of 1977 (SMCRA or the Surface Mining Act) for the following activities: (1) development, evaluation, and revision of regulations dealing with the environmental effects of surface coal mining and reclamation operations on federal, non-federal, and Indian lands; (2) review of proposed legislation; (3) approval of permits and mining plans on federal lands; (4) processing of petitions for designating federal lands and lands in federal program states as unsuitable for surface coal mining operations; (5) determinations of valid existing rights for certain lands on which mining is prohibited by SMCRA; (6) preparation of environmental impact statements and assessments; (7) oversight of state regulatory programs and approval of state program amendments; (8) negotiation, execution, and administration of federal-state cooperative agreements; (9) development and implementation of federal regulatory programs for issuance of mine permits and enforcement of environmental performance standards; (10) approval of state reclamation plans for abandoned mine lands; (11) development and implementation of federal reclamation projects for abandoned mine lands; (12) collection of statutory reclamation fees on all coal production and management of the Abandoned Mine Lands (AML) Reclamation Fund; (13) collection of civil penalties assessed; (14) enforcement of the Secretary's orders through injunction actions, criminal prosecutions, individual civil penalty assessments, and the denial, suspension, or revocation of permits; (15) processing of requests for documents under the Freedom of Information Act and the Privacy Act; (16) resolution of conflict-of-interest issues; and (17) representation of the Department in all defensive litigation arising under the Surface Mining Act.

Legal support is required in three types of judicial litigation and administrative proceedings involving the Office of Surface Mining Reclamation and Enforcement (OSM). First, the Solicitor's Office represents OSM in all administrative proceedings conducted by the Office of Hearings and Appeals (OHA) to review notices of violation and cessation orders, civil penalty assessments, approvals and denials of mine permit applications, suspensions and revocations of mine permits, blaster certifications, valid existing rights determinations, bond forfeiture decisions, and other OSM decisions. Second, the Solicitor's Office, in conjunction with the Land and Natural Resources Division of the Department of Justice, represents OSM and the Department in all litigation before the federal district courts, U.S. Claims Court, and courts of appeals involving challenges to the Surface Mining Act, rulemakings and enforcement proceedings under that Act, mine permit application decisions, "lands unsuitable" determinations, approvals and disapprovals of proposed amendments to approved state regulatory programs, decisions preempting portions of approved state regulatory programs, implementation of federal programs, and approvals and disapprovals of state-federal cooperative agreements, and in citizen suits filed under Section 520 of SMCRA. Third, individual enforcement actions and collection cases are brought on behalf of OSM in the U.S. District Courts. In most instances, such cases are the direct responsibility of attorneys in the Solicitor's Office who have been designated Special Assistant U.S. Attorneys.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Alternative Enforcement and Collections: Using net worth determinations supplied by OSM's contractors, the Office continued to pursue an aggressive program of closing alternative enforcement and collections cases that did not have litigation potential, filing cases that did have such potential, prosecuting filed cases through to judgment, and taking post-judgment enforcement action to secure mine site reclamation and the payment of outstanding debts. During fiscal year 1989, the Office filed 86 cases, obtained judgments in 125 cases, and closed 583 cases. The Office opened 661 cases during the same period, attributable in part to a fourfold increase in AML fee case referrals from the previous fiscal year. Pending alternative enforcement and collections cases as of September 30, 1989, totaled 2,829.

During this fiscal year, settlements were concluded with a number of operators who had underpaid their AML fees prior to July 1988 by deducting the weight of excess moisture from the number of tons of coal sold. A total of $1,448,876 was collected on these settlements, representing the entire principal amount owed.

The Office completed work this year on final enhancements to the Division of Surface Mining's Litigation Tracking System. The Office furnished advice to OSM concerning use of the Applicant/Violator System (AVS), which implements the permit blocking provisions of Section 510(c) of SMCRA, and concerning OSM's implementation of the settlements agreements in Save Our Cumberland Mountains, Inc. (SOCM) v. Hodel, No. 81-2134 (D.D.C. 1985) (Parker, J.), relating to the enforcement of failure-to-abate cessation orders, and SOCM v. Hodel, No. 81-2238 (D.D.C. 1985) (Richey, J.), relating to the enforcement of SMCRA's two-acre exemption (since repealed). Quarterly reports were filed with the court in each of the latter cases.

2. Regulatory Policy: During fiscal year 1989, the Office advised OSM on the development and promulgation of approximately 25 rules. These involved such complex issues as the rescission of permits identified by the AVS as having been improvidently issued and the definition of "valid existing rights" (VER) as used in Section 522(e) of the Surface Mining Act. In addition, the Office reviewed internal OSM directives which instruct OSM personnel on the implementation of various provisions of the statute and regulations. The Office also advised the Department concerning revisions to rules of the Office of Hearings and Appeals pertaining to the administrative review of OSM decisions under SMCRA.

3. State Programs: Upon Secretarial approval of state regulatory programs under Section 503 of SMCRA, states are authorized to assume responsibility for the regulation of surface coal mining and reclamation operations on non-federal and non-Indian lands within their borders. Amendments to state programs must be approved by OSM. The Office reviewed approximately 70 proposed and final amendments to approved state programs. The Office also advised OSM in its evaluation of significant state regulatory program issues, including the identification of state program amendments needed in response to OSM regulations promulgated during fiscal years 1988 and 1989.

SMCRA requires OSM to monitor the administration of the 24 approved state regulatory programs for compliance with SMCRA's requirements. The Office counseled OSM regarding the administration of those regulatory programs in such areas as permitting, bonding, enforcement, and designation of lands as unsuitable for coal mining; legal interpretations of SMCRA's provisions and implementing regulations; state grant applications; restricted financial interest issues; and federal enforcement responsibilities, including the advisability of initiating proceedings under 30 C.F.R. Part 733.

Significant work continued on issues concerning implementation of a settlement agreement relating to the administration of the state program in Kentucky. The Office represented OSM in quarterly briefings and additional negotiating sessions with the State, environmental groups, and industry representatives to resolve technical issues relating to backfilling and grading, revegetation, water quality, and post-mining land use.

4. Federal Regulatory Programs: Section 504 of SMCRA mandates a federal regulatory program for any state with coal mining which fails to submit or maintain its own program for the regulation of surface coal mining operations. Under section 504, OSM administers federal regulatory programs in 11 states. The Office provided legal advice concerning permitting, bonding, enforcement, and other issues which arose in federal program states. The principal Federal program states for which such advice was provided are Georgia, Tennessee, Washington, and California.

5. Federal Lands: Section 523 of SMCRA obligates OSM to provide for the regulation of surface coal mining operations on federal lands. The Office assisted OSM in proposing to promulgate revisions to its federal lands program. Section 523 also affirms the Secretary's responsibility to approve mining plans under the Mineral Leasing Act. The Office reviewed 12 federal lands decision packages for compliance with SMCRA, OSM regulations, other federal laws, and Executive Orders.

Under OSM's federal lands program, OSM is responsible for making VER and compatibility determinations on federal lands under Section 522(e)(1)-(2) of SMCRA, and evaluating unsuitability petitions submitted under Section 522(c) on federal lands. The Office assisted OSM with regard to three VER requests and two unsuitability petitions.

6. Cooperative Agreements: Section 523(c) of SMCRA allows any state with an approved state regulatory program to enter into a cooperative agreement with the Secretary to provide for state regulation of surface coal mining and reclamation operations on federal lands within that state. The Office assisted OSM in drafting federal lands cooperative agreements and in revising such agreements. The Office provided legal assistance to OSM in the administration of 11 cooperative agreements already in effect between states and OSM.

7. Indian Lands: The Office continued to advise OSM in administering its program promulgated under section 710 of SMCRA for regulating surface coal mining operations on Indian lands. The Office reviewed documentation concerning six applications for permits and permit revisions for mining on Indian lands. In addition, the Office counseled OSM on a number of jurisdictional issues concerning mining on Indian lands, including the

promulgation of a final rule to clarify such jurisdiction. The Office also assisted OSM with regard to the relationship between SMCRA and recent amendments to the Indian Self-Determination Act.

8. National Environmental Policy Act (NEPA) Compliance: The Office assisted OSM by reviewing NEPA compliance documents and providing general advice with regard to OSM NEPA compliance. The Office reviewed four environmental impact statements (EIS's), including the draft EIS regarding the surface impacts of underground mining and the definition of VER. The Office also assisted OSM in revising its NEPA compliance handbook.

9. Interagency Activities: The Office assisted OSM in the development and negotiation of memorandums of understanding with the U.S. Forest Service, the Bureau of Land Management, and the Bureau of Indian Affairs. In addition, the Office counseled the Department in evaluating and responding to a proposal by the Environmental Protection Agency to list large surface coal mines as major sources of pollution subject to new source review and prevention of significant deterioration standards under the Clean Air Act.

10. Abandoned Mined Land Reclamation: Section 405(b) of SMCRA allows each state with an approved regulatory program to submit a state reclamation plan and annual project proposals to accomplish the reclamation of abandoned mine lands. During fiscal year 1989, the Office advised OSM in developing, evaluating, negotiating, and drafting 10 state AML program amendments and three Tribal reclamation plans (for the Crow, Hopi, and Navajo). Additionally, the Office counseled OSM in its annual review of the 26 AML reclamation programs (with fiscal year 1989 expenditures exceeding $150 million) for compliance with Title IV of SMCRA and 30 C.F.R. Subchapter R. The Office also reviewed AML grant submissions for compliance with the states' reclamation plans.

During the fiscal year, the Office continued to assist OSM in developing and presenting workshops across the country on realty issues, liens, remining, tax consequences, and AML eligibility. The Office advised OSM in developing and implementing seven agency directives for administering its AML program. In addition, the Office assisted OSM in reviewing independent bills that would affect or amend various provisions of Title IV (e.g., H.R. 538, H.R. 1315, H.R. 2719, H.R. 2791, H.R. 1376, H.R. 2604, S. 599 and S. 943), as well as proposed legislation that would reauthorize and extend the provisions of Title IV (H.R. 2095).

The Office also assisted OSM in reviewing submissions by states requesting funds for the establishment of state-administered programs to insure private property against damages caused by land subsidence resulting from underground coal mining and prepared numerous legal opinions on specific issues involving the administration of the AML program.

11. Federal Reclamation Program: The Office provided advice to OSM on the general administration of the federal AML program, including advice on various aspects of approximately 150 federal emergency and non-emergency AML projects (project selection, contract award, challenges to contract awards, performance monitoring, and tort claims arising out of federal AML projects). In addition, the Office assisted OSM in resolving AML realty issues, including the placement of liens on property that had increased in value due to reclamation efforts.

12. Defensive Litigation: Over 30 challenges to OSM's rules and rulemaking petition decisions were filed during fiscal year 1989. Among the rules challenged were those concerning ownership and control of mining operations, assessment of individual civil penalties against corporate officials, ten-day notices to state regulatory authorities, termination of regulatory jurisdiction, subsidence, revegetation, prime farmlands, and a moisture deduction for AML fees. The Office also represented the Office of Hearings and Appeals (OHA) in a challenge to its procedural rules governing administrative appeals of OSM decisions. The parties in that case agreed to a settlement covering most of the challenged OHA rules.

Litigation over the award of attorney's fees and expenses in the SOCM two-acre case was settled during fiscal year 1989. The settlement agreement was the result of the D.C. Circuit's remand of the case to the district court for a determination of the appropriate hourly rates. The circuit court had reexamined the standard for determining the reasonable hourly rate of public interest law firms in attorney's fee awards. A settlement agreement in the government's appeal of the attorney's fee award in the SOCM failure-to-abate case was also reached.

The plaintiffs in the SOCM failure-to-abate case filed a motion in the district court, alleging that OSM had failed to comply with the revised order issued by Judge Parker in 1985. The Office assisted OSM and the Department of Justice in responding to the plaintiffs' discovery requests and in filing a brief in opposition to the plaintiffs' motion.

Several other federal court suits and administrative proceedings challenging OSM's enforcement actions were concluded during the fiscal year.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR COMPLETED:

1. Alternative Enforcement and Collections: During fiscal year 1990, the Office expects to complete its closing of the bulk of the no-asset cases received prior to fiscal year 1989, as well as the filing of the more promising cases. As compared with fiscal year 1989, more effort will be devoted to pre-trial discovery, motions, hearings, and trials, and less to the review of net worth determinations and termination referrals. The Office has initiated a review of existing judgments to determine priorities in enforcing collection, and to make decisions on whether to close other cases based on the probability of realizing substantial recoveries.

As in fiscal year 1989, a significant number of new referrals are expected as a result of OSM's continuing effort to review its enforcement and collection files and refer cases to the Solicitor's Office, as well as OSM's assessment of individual civil penalties and use of the AVS to deny and rescind permits. Significant additional work will continue throughout the year to assist OSM's new management in the development and implementation of enforcement strategies based on the settlement agreements in the two SOCM v. Hodel cases and on OSM's new AVS-related rules.

2. Regulatory Policy: The Office expects to assist OSM with approximately 15 rulemakings during fiscal year 1990, including major rules dealing with the mining of coal incidental to the mining of other minerals, valid existing rights, the surface effects of underground mining, and revisions to existing

regulations that may be necessitated by court order or settlement agreement. Day-to-day legal advice continues to be provided to OSM in implementing and interpreting regulations. In addition, the Office continues to review internal OSM directives which instruct OSM personnel on the implementation of various matters concerning the statute and regulations. Finally, the Office continues to assist OSM on legislative initiatives.

3. State Programs: The Office anticipates reviewing approximately 90 already received and expected amendments to state programs intended to implement OSM's regulatory revisions--both state-initiated amendments and amendments required by changes in OSM's regulations. As in fiscal year 1989, the Office will provide counsel, as needed, regarding evaluations of state program administration in areas such as permitting, bonding, enforcement, and designation of lands unsuitable; legal interpretations of SMCRA's provisions and implementing regulations; state grant applications; restricted financial interest issues; and federal enforcement responsibilities, including the advisability of initiating proceedings under 30 C.F.R. Part 733.

4. Federal Regulatory Programs: The Office continues to provide OSM with legal assistance, as needed, in administering federal regulatory programs in the 11 states which do not have approved state regulatory programs. Such assistance includes legal advice on permitting, bonding, enforcement, and other program issues.

5. Federal Lands: The Office is assisting OSM with four VER requests for federal lands and expects to review one compatibility request. The Office is reviewing and expects to review approximately 10 decision packages for mining on federal lands.

6. Cooperative Agreements: The Office continues to counsel OSM as issues arise in the administration of existing cooperative agreements, including issues involving oversight of state actions, administration of non-delegated responsibilities, and potential revisions to such agreements.

7. Indian Lands: The Office is providing counsel concerning the approval of mining on Indian lands, including the permitting of the Black Mesa/Keyenta Mine, and is providing advice to OSM on other issues concerning coal mining on Indian lands, including implementation of a recent decision of the Interior Board of Land Appeals concerning jurisdiction.

8. National Environmental Policy Act (NEPA) Compliance: The Office anticipates reviewing three environmental impact statements and other NEPA compliance documents for legal sufficiency, including an EIS relating to the Black Mesa/Keyenta permitting action and a revised draft EIS on VER, and will also be providing other NEPA compliance advice to OSM.

9. Interagency Activities: The Office has assisted and will be assisting OSM in the development and implementation of memorandums of understanding (MOU's) with other federal agencies, including an MOU with the U. S. Forest Service concerning VER determinations involving National Forests, and an expanded MOU with the Tennessee Valley Authority concerning the denial of coal supply contracts to SMCRA violators.

10. Abandoned Mine Lands: The Office is continuing to provide legal support for OSM in connection with its oversight of approved state reclamation programs (whose fiscal year 1990 expenditures are expected to total $138 million). The Office will review the annual reclamation work plan submissions from 24 states and three Indian tribes; expects to advise OSM in developing, evaluating, and negotiating eight state AML program amendments; and expects to assist OSM in developing and implementing five agency directives for administering the AML program.

In addition, the Office continues to provide substantial support to OSM in evaluating and drafting legislative proposals extending the AML program. If such legislation is passed in fiscal year 1990, the Office will assist OSM in revising its national regulations to be consistent with the new statutory requirements, and in reviewing similar regulatory changes in state AML plans.

11. Federal Reclamation Program: The Office is continuing to provide advice to OSM on the general administration of the federal AML program. The Office anticipates advising OSM on various aspects of approximately 150 federal emergency and non-emergency projects during fiscal year 1990, including advice on AML project selection, contract awards, performance monitoring, tort claims, and realty issues.

12. Defensive Litigation: The Office continues to devote substantial resources to its representation of OSM in the SOCM v. Hodel failure-to-abate case and in the numerous challenges to OSM's rules. For the first months of the fiscal year, the Office has been engaged in intensive settlement negotiations with the SOCM plaintiffs in an effort to resolve the issues raised by the plaintiffs' motion, including issues related to implementation of OSM's Applicant/Violator System (AVS). The Office expects significant additional litigation in the case, either with the plaintiffs, if a settlement is not reached, or possibly with industry groups, if a settlement with the plaintiffs is reached.

Litigation involving the various rule challenges filed in fiscal year 1989 is continuing in the district court, and additional rule challenges have been filed and are expected in fiscal year 1990. The Office has recently filed briefs on behalf of OSM in cases involving individual civil penalties, ten-day notices, termination of jurisdiction, revegetation, and prime farmlands; major issues remaining to be briefed include the definition of "owned or controlled," the rescission of improvidently issued permits, and the exemption of coal removal incidental to the mining of other minerals.

Individual litigation matters have been initiated or are expected as a result of administrative decisions by OSM on VER applications, mining plans, and unsuitability petitions; from inverse condemnation actions filed by persons allegedly aggrieved by the prohibition of mining in protected areas, as defined by SMCRA; from OSM's approval or disapproval of proposed state program amendments; from OSM's implementation of new rules governing the assessment of individual civil penalties, permit blocking and rescission under Section 510(c) of SMCRA, termination of regulatory jurisdiction, state responses to oversight actions, entitlement to the incidental mining exemption, and applicability of the moisture deduction from AML fees; and from requests for attorney's fees in both administrative and judicial cases.

The attorney's fees dispute in the administrative litigation in NRDC v. OSM was settled earlier this fiscal year. That case involved the first challenge to a federally-issued permit under SMCRA.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Alternative Enforcement and Collections: During fiscal year 1991, the Office expects to complete most of the pre-judgment litigation on cases filed during prior years, and to devote increasing effort to post-judgment discovery, contempt proceedings, judgment executions, and garnishments. As a corollary to this effort, review of prior judgments and closing of cases without a good probability of recovery will be completed, enabling the Office to concentrate increasingly on newer referrals.

Continued new referrals are expected as a result of OSM's assessment of individual civil penalties; use of the AVS to deny, suspend, and revoke permits; other enforcement actions taken under the settlement agreements in the two SOCM v. Hodel cases; and AML fee audits. The Office will continue to advise OSM concerning the implementation of its enforcement strategy.

2. Regulatory Policy: The Office anticipates that approximately 15 rulemakings will be active during fiscal year 1991, including development of final VER and subsidence rules. Day-to-day legal advice will continue to be provided to OSM in implementing and interpreting regulations. In addition, the Office expects to review internal OSM directives which instruct OSM personnel on the implementation of various matters concerning the statute and regulations. The Office will assist OSM on any future legislative initiatives.

3. State Programs: The Office will assist OSM in reviewing an expected 60 amendments to state programs--both state-initiated amendments and amendments required by changes in OSM's regulations. The Office will also provide counsel to OSM, as needed, regarding evaluations of state program administration in areas such as permitting, bonding, enforcement, and designation of lands unsuitable; legal interpretations of SMCRA's provisions and implementing regulations; state grant applications; restricted financial interest issues; and federal enforcement responsibilities, including the advisability of initiating proceedings under 30 C.F.R. Part 733.

4. Federal Regulatory Programs: The Office will provide OSM with legal assistance, as needed, in administering federal regulatory programs in the 11 states which do not have approved state regulatory programs.

5. Federal Lands: As in fiscal year 1990, the Office expects to assist OSM with VER and compatibility determinations for permit applications on federal lands. The Office also expects to review several decision packages for mining on federal lands.

6. Cooperative Agreements: The Office will continue to counsel OSM as issues arise in the administration of existing cooperative agreements, including issues involving oversight of state actions and potential revisions to such agreements.

7. Indian Lands: The Office expects to review decision packages for approval of mining on Indian lands and to provide advice to OSM on other issues concerning coal mining on Indian lands.

8. National Environmental Policy Act (NEPA) Compliance: The Office expects to review environmental impact statements, including a final EIS on VER and other NEPA compliance documents for legal sufficiency, and will provide other NEPA compliance advice.

9. Abandoned Mined Land Reclamation: The Office will continue to assist OSM in its annual review of state and tribal AML programs for consistency with the approved reclamation plans, Title IV of SMCRA, and 30 C.F.R. Subchapter R. As necessary, the Office will work with OSM, states, and tribes on matters involving the AML program, including grants, liens, rights of entry, eligibility, police power, condemnation, emergencies, and acquisitions. The Office will also continue to advise OSM in carrying out oversight of state and tribal reclamation expenditures and in implementing any new legislation extending, expanding, or modifying the AML program.

10. Federal Reclamation Program: The Office will continue to provide advice to OSM on the general administration of the federal AML program. The Office will also assist OSM with regard to AML project selection, contract awards, performance monitoring, tort claims, and realty issues.

11. Defensive Litigation: The Office anticipates that district and appellate court litigation involving numerous rule challenges will continue in fiscal year 1991, as appeals are expected from most or all of the district court decisions. The Office will likewise continue its assistance to OSM in defending specific enforcement actions, as well as challenges to OSM's oversight activities.

As in fiscal year 1990, new litigation matters are expected to result from administrative decisions by OSM on VER applications, mining plans, and unsuitability petitions; from inverse condemnation actions filed by persons allegedly aggrieved by the prohibition of mining in protected areas, as defined by SMCRA; from OSM's approval or disapproval of proposed state program amendments; and from OSM's implementation of new and revised rules. Attorney's fee litigation is expected to continue in both administrative and judicial forums. The Office anticipates that issues will continue to arise concerning OSM's implementation of any settlement agreement reached or further order rendered in the SOCM v. Hodel failure-to-abate case.

BUREAU OF MINES
Client

BASE ACTIVITIES:

As a result of research conducted by the Bureau of Mines (BOM) through its research centers, new inventions are discovered which warrant patent prosecutions. The Office provides counsel in all areas of intellectual property rights, including litigation, regulation, and contracts. Further, legal advice in litigation is provided in connection with the operations of the helium program. In addition, the Office provides legal advice and review of cooperative agreements, grants, tort and employee claims and general legal problems arising from Bureau operations.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Helium Suits: Continuing efforts were devoted to the remaining proceedings in Northern Natural Gas v. Grounds, including proceedings in Kansas Federal and State courts. Northern Helex v. United States, an indemnification case in the Claims Court arising out of Grounds, in which the plaintiff sought over $24 million, was settled for $600,000.

2. Helium Sales: The Office advised the Bureau, and provided suggested contractual language concerning the sale of government helium contained in natural gas obtained under Federal oil and gas leases to Mobil Oil Corporation and Union Oil Company of California.

3. Maxey Flats Nuclear Disposal Site Cleanup: A former Bureau facility, the Bartlesville, Oklahoma, research facility, has been designated as a potentially responsible party for nuclear waste deposits at the Maxey Flats Site in Kentucky. The Office assisted the Bureau in assessing its responsibilities under the Comprehensive Environmental Response, Compensation and Liability Act for the cleanup of a portion of the deposited wastes, and awaited a response from the Environmental Protection Agency to this Office's legal opinion expressing the position that BOM is not liable for any of the cleanup activities.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Helium Suits: The Office anticipates that the efforts described for fiscal year 1989 will continue. Further action is anticipated in cases pending in the Texas State courts.

2. Helium Sales: Because of anticipated continued private sector interest in the purchase of government helium contained in natural gas obtained under federal oil and gas leases, the Office anticipates a continued need to advise the Bureau concerning helium sales.

3. Maxey Flats Nuclear Disposal Site Cleanup: The Office will continue to provide legal support to the Bureau in meeting any appropriate share of the responsibility for the cleanup. Legal support may continue through fiscal year 1991.

4. Mercury Cleanup-Carnegie Mellon University Buildings: The Bureau requested the assistance of the Office in responding to a request from Carnegie Mellon University on cleanup of mercury deposits discovered in pipes in a building purchased by the University from the Bureau. Negotiations with the University began in fiscal year 1988. The Office will continue to provide legal support to the Bureau in meeting any appropriate share of the responsibility for the cleanup.

5. Dow Chemical Company v. United States: This suit was brought in the Claims Court in 1983. Dow Chemical claimed infringement of a patent to fill voids in spent mines, claiming over $5 million in damages, doubled to over $11 million. Trial was held in 1987 on the validity issues. The Office is awaiting the court's decision.

6. Federal Technology Transfer Act: The Office provides advice to the Bureau on questions arising under the Act and Executive Order 12591. We are also advising on issues involving invention rights for small businesses and non-profit organizations.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED

1. Helium Suits: The Office anticipates continued litigation in the Helium program.

2. Helium Sales: The Office anticipates the need for continued advice concerning helium sales.

3. Mercury Cleanup-Carnegie Mellon University Buildings: The Office will continue to provide legal support to the Bureau in meeting any appropriate share of the responsibility for cleanup.

OFFICE OF INSPECTOR GENERAL
Client

BASE ACTIVITIES:

The Office of the Solicitor provides legal support to the Office of Inspector General (OIG). The principal mission of the OIG, as mandated by the Inspector General Act of 1978, is the promotion of economy and efficiency in the operations of the Department and in the programs which it administers or finances. Under the general supervision of the Secretary, the OIG pursues its mission by performing audits and investigations and issues reports and recommendations to appropriate officials of the Department and the Congress. Moreover, the OIG has additional specific audit and investigative responsibilities pursuant to the Insular Areas Act of 1982 and the Single Audit Act of 1984.

Numerous jurisdictional, procedural and substantive legal questions, both civil and criminal, arise due to the broad scope of OIG activities. In addition to addressing these issues, the Office assists the OIG in its relationship with the Department of Justice and the law enforcement community generally, and serves as legal advisor to the OIG on legislative matters which affect not only the OIG but relate to the Department's programs and operations as well. The Office also provides legal advice with regard to the administrative operations of the OIG, including the provision of litigation support in cases involving the OIG or its personnel.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Inspector General's Authority in Palau: The Office provided legal advice concerning the scope of the Inspector General's audit and investigative authority in the territory of Palau and the applicability of federal criminal law.

2. Office Manual Chapters: The Office assisted in drafting and reviewing the chapters which provide guidance to the auditors, investigators and administrative personnel of the Office of Inspector General as a part of a complete revision of the Inspector General office manual.

3. Major Audits: The Office provided legal advice to the OIG regarding numerous issues which arose from audits of major programs administered by the Department's various bureaus.

4. Appeal of Virgin Islands Case: The Office provided litigation support to the Department of Justice in the appeal of a trial court decision granting enforcement of an Inspector General subpoena. The support included assistance in the formulation of issues and strategies, and review and comment on pleadings and briefs. The matter was successfully concluded when the Supreme Court denied certiorari in October, 1988.

5. NMI Subpoena Enforcement: The Office provided legal support to the Department of Justice in connection with the enforcement of an Inspector General subpoena served upon the Mariana Islands Housing Authority in the Northern Mariana Islands. The support included the preparation of legal memoranda, exhibits, and an affidavit. The Office received a favorable

decision from the District Court and the case is now on appeal to the Court of Appeals.

6. Freedom of Information Act: The Office provided legal advice to the Office of Inspector General with respect to 155 responses to requests made pursuant to the Freedom of Information Act as of September 30, 1989.

7. Legislation: As of September 30, 1989 the Office had reviewed 872 legislative items for potential waste and inefficiency as required by Section 4(a) 2 of the Inspector General Act of 1978.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OF ANTICIPATED:

In addition to the pursuit of activities subsumed under "Base Activities," it is anticipated that the following areas will require significant legal support.

1. Single Audit Act: Legal work will continue on issues raised as a result of the Department's implementation of the Single Audit Act of 1984.

2. Compacts of Free Association: Passage of Pub.L. 99-239 (48 U.S.C. section 1681 note) and promulgation of the implementing Executive Order will cause a increase in the need for legal advice and services because the Compacts place increased audit and investigative responsibilities on the Inspector General.

3. Guam Tax Audit: The Office provided written legal advice on the scope of OIG authority to access to Guam income tax records and has assisted in the preparation and service of a subpoena duces tecum in support of an audit of the Guam Department of Revenue and Taxation.

4. NMI Subpoena Enforcement: The Office is providing legal support to the Department of Justice in the appeal to the Court of Appeals for the Ninth Circuit of a trial court decision granting enforcement of an Inspector General subpoena. This support involves assistance in the formulation of strategy and the development of briefs.

5. Planned Audits: Numerous legal issues have arisen and are anticipated to arise from audits conducted in accordance with the OIG Audit workplan for 1990.

6. False Claims and Program Fraud: It is expected that legal work will be necessary to implement the Program Fraud Civil Remedies Act of 1986. This work will include: advising the Office of Inspector General of its responsibilities under the Act and providing appropriate training; advising on and reviewing cases; transmitting cases to the Department of Justice; conducting and coordinating administrative litigation of cases and related activities; conducting and coordinating administrative appeals of cases; and providing litigation support to the Department of Justice in judicial enforcement of agency decisions or appeals from those decisions.

7. Indian Bingo: It is expected that legal work will be necessary in support of the Department's responsibilities regarding Indian bingo pending establishment of the Indian Gaming Commission.

8. Legislation: The Office will continue to review legislative and regulatory initiatives for potential waste and inefficiency in accordance with the mandate of Section 4(a)2 of the Inspector General Act of 1978.

9. Freedom of Information Act: The Office will continue to provide legal advice regarding public requests for disclosure of information pursuant to the Freedom of Information Act.

10. Litigation Support: The Office will continue to provide legal services relating to civil suits for subpoena enforcement and discovery.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

The Solicitor's Office will continue to provide legal support to the Office of Inspector General as the latter discharges its responsibilities to detect and prevent fraud, waste and mismanagement and promote efficiency and economy in the programs and operations of the Department.

ASSISTANT SECRETARY FOR TERRITORIAL AND INTERNATIONAL AFFAIRS

Client

BASE ACTIVITIES:

The Department of the Interior, through the Office of the Territorial and International Affairs (TIA), is responsible for the administration of most of the territories of the United States and Palau, the sole remaining entity of the Trust Territory of the Pacific Islands. The Solicitor's Office provides legal advice to TIA on all phases of the varied and continuing relationships between the United States and the Virgin Islands, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Palau, and the new states in free association with the United States - the Republic of the Marshall Islands and the Federated States of Micronesia. It also assists other departments and agencies in the coordination of the programs of the United States that are applicable to those areas. Legal assistance is required to study the codified laws of the United States and establish their applicability to, and impact on, the territories. Emphasis is being placed on identifying and modifying those laws that create the greatest barriers to continued territorial development. In addition, the Solicitor's Office provides legal advice and counsel in other areas, including procurement and general administration.

FY 1989 MAJOR LEGAL PROJECTS COMPLETED:

1. Study of Applicability of United States Laws to the Territories: The Office has completed the analysis of all titles of the United States Code with respect to their impact on the territories, except for one portion of the Title 42, with the analyses recorded in memoranda and circulated to interested agencies of the Executive Branch for comment. Comments received have been reflected in revised memoranda, and such revised versions have been transmitted to the territories for comment.

2. Changing Status of Several Trust Areas: The United States and the Republic of the Marshall Islands, the Federated States of Micronesia and the Republic of Palau signed Compacts of Free Association. Congress approved the Compacts with the Marshall Islands and the Federated States of Micronesia. The Office advised on legal questions arising from the on-going responsibilities for Palau, for which a compact is not yet effective.

3. Guam Commonwealth Legislation: The Office, in cooperation with the Office of Territorial Affairs and with about two dozen other Federal agencies that are involved in the proposal, assessed the legal implications of the Guam Commonwealth Act (H.R. 98 of the 101st Congress), prepared alternative language where appropriate, prepared legal memoranda on various Constitutional and other points raised, and drafted extensive commentary for the Congress on the foregoing.

4. Tulensru v. United States: The Office worked with the Justice and State Departments and OMB in developing a settlement proposal for settling this case pending in the Federated States of Micronesia. The case involves a claim for damages caused by erosion of beach property on the Island of Kosrae. The erosion resulted from the construction of the Kosrae International Airport in 1981. The settlement proposal was based on a TIA-contracted study by the Corps

of Engineers to determine the cost and feasibility of restoring the beach. Substantial additional work remains in concluding the settlement, appropriating funds, and carrying through on restoration.

5. Wage Discrimination Class Actions: Two cases, Temengil v. Trust Territory Diaz v. Trust Territory were filed in Federal District Court in Saipan. Plaintiffs in both cases allege that the Trust Territory Government's practice of compensating the citizens at a rate lower than United States citizens is a violation of the Trusteeship Agreement and the plaintiffs' constitutional rights. The District Court issued a final judgment in the amount of $21 million against the Trust Territory Government on December 1, 1987. The Office worked with the Department of Justice and attorneys for the Trust Territory Government in briefing the cases on appeal before the Ninth Circuit. Oral arguments were heard in December 1988. In July 1989, the Ninth Circuit reversed the District Court and dismissed the case. The Temengil plaintiffs filed a motion for an en banc rehearing before the Ninth Circuit. The Diaz case remains pending. The Office worked with the Department of Justice in filing a motion with the Ninth Circuit to amend that Court's decision on an intervention motion.

6. Northern Mariana Islands Consultations: Section 902 of the Covenant to Establish the Commonwealth of the Northern Mariana Islands requires periodic consultation between the United States and the Commonwealth. The first three consultation meetings were held in fiscal year 1987. The President appointed a new representative in May 1988 and a meeting was held in Saipan in September. Several other meetings were held prior to the resignation of the Special Representative. A new representative should be appointed in the near future. The Solicitor's Office has provided advice to the President's representatives on matters within the expertise of the Office. A suit was filed requesting the District Court for the Northern Mariana Islands to take jurisdiction over the negotiations. The District Court declined to do so and the plaintiff has appealed. The Office will continue to work with the Department of Justice on this case.

7. Challenge to the Constitutionality of the Commonwealth of the Northern Mariana Islands (CNMI) Covenant: Section 203 of the Covenant to Establish the Commonwealth of the Northern Mariana Islands in Political Union with the United States (Covenant) provides that the islands of Rota, Tinian, and Saipan shall elect three senators each to the CNMI legislature. Section 805 of the Covenant restricts the alienation of interest in real property to persons of Northern Mariana Islands (NMI) descent. Both sections are declared fundamental provisions of the Covenant, meaning they can be changed only by the mutual consent of the United States and the Commonwealth. An American citizen from California living on Saipan filed a suit in the District Court of the NMI alleging Section 203 dilutes his right to vote under the "one-man-one-vote" doctrine of the U.S. Constitution and Section 805 discriminates against him by denying him the right to own property. He further alleged that these sections are fundamental provisions of the Covenant, and, if declared unconstitutional, the entire Covenant is unconstitutional. On January 25, 1988, the Court granted our Motion for Judgment on the Pleadings, dismissing the complaint. Plaintiff filed a Motion for Reconsideration which was denied. Plaintiff appealed to the Ninth Circuit but later withdrew his appeal. The Office will continue to provide legal support to the Department of Justice in defending this case.

8. Micronesian Claims: Congress appropriated sufficient funds to pay the remaining amounts awarded by the Micronesian Claims Commission to claimants under Title I the Micronesian Claims Act of 1971. The Commission certified awards of over $34 million, but the Department was able only to pay about $11.7 million. These were paid on a pro rata basis. The Office will continue to provide legal assistance to TIA on the methodology of ascertaining the now rightful claimants and proper payments of the amounts appropriated.

9. Alep v. United States: The inhabitants of a small island in Truk lagoon filed a suit in the Supreme Court of the Federated States of Micronesian, Truk State, alleging they were deprived of their property and suffered physical and mental injuries when they were removed from their island by U.S. Armed Forces in 1945. The Solicitor's Office worked with the Department of Justice and Trust Territory attorneys in preparing an answer and motion to dismiss. The motion to dismiss is based on 1) the statute of limitation; 2) laches; and 3) the plaintiffs were compensated for the taking, use, and destruction of their property under the Micronesian Claims Act of 1971.

10. Hawaiian Homes Commission Act: As a consequence of the Department's serving as lead agency for purposes of this Act, the Department encouraged the internal clearance and ultimate enactment of legislation, required by the Statehood Act for Hawaii, to provide consent to State-enacted amendments to that Act. The Office also provided assistance to the Congress and to other interested federal agencies on matters arising from the Homes Commission Act.

11. Virgin Islands Loan Guarantee: The Office assisted with negotiation of a $70 million loan guarantee of capital projects.

12. Puerto Rico: The Office advised Congress on various options in connection with the Puerto Rico status legislation.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Construction of the Compact of Free Association Act and Related Legislation: The Compacts with the Federated States and the Marshalls, and the Compact with Palau are documents of unusual complexity and length and, potentially, unusual controversy as to their legal implications. A substantial amount of time and attention has been and is expected to be required by the Office to deal with the legal consequences of this legislation.

2. Northern Mariana Islands Consultations: Consultation meetings between the United States and the Commonwealth of the Northern Mariana Islands should continue.
3. Micronesian Claims: The Office will continue to provide legal assistance to TIA in determining the proper claimants and the payments granted thereto.

4. Tulensru v. United States: The Office will continue to work with the Department of Justice as considerable work is anticipated in litigating or setting this case.

5. Alep v. United States: The Office will continue to advise the Department of Justice and help prepare evidence to be used in this case.

6. Virgin Islands Status: The Virgin Islands is considering options in regard to the changing of their political relationship with the United States. The Office will advise TIA on the options and the legal problems that may arise.

7. Study of Applicability of United States Laws to the Trust Territories: The Office will complete the study on this subject, which will involve the revision of a portion of work earlier completed in order to update it, the preparation of prefatory and other explanatory comment, and the organization of the material for whatever publication is arranged. The project will then be completed.

8. Guam Commonwealth Act: The Office participated in hearings on this legislation in 1989. Legal questions have arisen that require study, and the drafting of alternative provisions and their explanation -- all following extensive consultation among interested agencies, key committees of the Congress, and representatives of Guam.

9. Hawaiian Homes Commission Act: Assuming that the Act does not undergo material amendment at the federal level, the Office will continue to be responsible for legislation providing consent to State-enacted amendments, for Secretarial approval of proposed land exchanges, and for any other federal implications arising from the Hawaiian Homes program. Legal assistance in this area of responsibility will continue through fiscal year 1991.

10. Puerto Rico: The Office anticipates continued activity regarding the Puerto Rico status legislation.

11. Temengil v. Trust Territory: The Ninth Circuit of Appeals denied the motion for a rehearing on January 2, 1990.

12. Water Island: The United States owns an island in the harbor of Charlotte Amalie, St. Thomas, Virgin Islands, known as Water Island. It is under a lease with a private party that expires in 1992. Congress directed the Secretary, in consultation with the government of the Virgin Islands, to develop options for the future use or disposition of Water Island. The options were submitted to Congress in early 1987 and a Congressional hearing was held on April 2, 1987. A bill was introduced in Congress directing the Secretary to transfer the title of Water Island to the Virgin Islands Government after Congress has approved a plan for its use by the Virgin Islands Government. The Office will advise TIA on the legal ramifications and potential liabilities created by the bill.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Virgin Islands Status: The Office anticipates significant work regarding the possible change of the political relationship between the United States and the Virgin Islands.

2. Interpretation of the Compact of Free Association and Related Legislation: The Office anticipates providing legal advice regarding programs and activities provided to the Freely Associated States by departments and agencies of the United States.

3. Palau: The Office anticipates significant work regarding the status of the Compact with Palau. Assuming the approval of the Compact, legal advice will be on the change in relationship with the United States. If there is no approval, Palau will continue as the remaining part of the Trust Territory of the Pacific Islands.

4. Guam Commonwealth Act: Because enactment of legislation on this subject before October 1, 1990, seems unlikely, the Office will have a continuing responsibility to provide assistance within the Executive Branch and to the Congress on the contents of the bill. It is likely that many legal questions, particularly including Constitutional questions of first impression, will continue to arise and require careful analysis.

OFFICE FOR EQUAL OPPORTUNITY
Client

BASE ACTIVITIES:

The various equal opportunity laws, including Titles VI, VII and IX of the Civil Rights Act, the Rehabilitation Act, the Age Discrimination in Employment Act, the Civil Rights Restoration Act and the implementing regulations, regularly generate requests to the Office by bureaus and offices for oral and written legal advice. The primary client is the Department's Office for Equal Opportunity (OEO). The Office provides legal counsel and representation under these statutes, as well as case law, rules, regulations, Executive Orders, and the Departmental Manual provisions affecting equal opportunity in the Department and its programs. Legal advice and assistance is also provided with respect to equal opportunity requirements for external programs which receive federal financial assistance. The Office has the primary responsibility for assisting the Department of Justice in defending the Department in all civil litigation where allegations of discrimination are raised. The Office represents the bureaus and offices in all administrative hearings before an Administrative Judge of the Equal Employment Opportunity Commission (EEOC). The Office also provides training to OEO officials, investigators and bureau officials.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Defensive Litigation: Ten cases were settled, including a case challenging the 1984 U.S. Park Police promotion examination. An appeal to the D.C. Circuit in a significant Title VII case involving "bumping" of an SES official was decided against the Department.

2. Complaints Processing: A total of 20 cases were decided and in 16 cases there was a finding of no discrimination. The Office participated in the settlement of 35 cases. About 30 EEOC-recommended decisions and bureau-proposed dispositions were reviewed.

3. Class Action Complaints: The Office received the EEOC's decision in Osolinik v. Interior, a class action case. The EEOC concluded that there had been no discrimination by the Solicitor's Office against female attorneys as a class, but ordered relief on an individual basis to eight persons who testified at the 1983 hearing. The parties have executed an agreement which resolves all of the outstanding issues. A question concerning interest on back pay in Title VII cases was submitted by the parties to the Department of Justice, which agreed with Interior's position that sovereign immunity had not been waived for the payment of such interest.

4. Departmental Manual Revision: The last significant revision to the Departmental Manual provisions on equal opportunity occurred in 1973. A revised version was submitted for legal review. A number of issues were reviewed with the Office for Equal Opportunity.

5. Attorney Fees: Forty attorney fee claims in discrimination cases were reviewed.

6. Training: The Office made six presentations to OEO and bureau staff concerning recent developments in equal opportunity law. The Office also provided articles on recent developments for inclusion in the OEO newsletter.

7. Financial Assistance: The Office provided advice on five new complaints concerning discrimination in projects receiving financial assistance. One legal opinion was issued. The Office assisted in reviewing and resolving accessibility issues concerning restroom facilities at the Kennedy Center.

8. Legal Opinions. The Office advised the Department on the application of the Architectural Barriers Act and the Rehabilitation Act to a non-accessible dock built by a concessioner with private funds on private land. Legal opinions were also drafted and issued dealing with novel issues such as the use of EEO officials as technical representatives at EEOC hearings and the impact of the Indian Preference Act o developing qualification standards for Indians in the Bureau of Indian Affair Comments were prepared and submitted to OMB and EEOC concerning EEOC's proposed Part 1614 regulations to overhaul the federal complaints processing system. The Office also reviewed and commented on a number of EEOC policy directives concerning sexual harassment, security clearances and the impact to the immigration laws on Title VII issues.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Court Cases: Ten cases have been filed. The Office expects approximately 25 additional cases; about ten cases will go to trial. Eight cases, approximately, will be settled.

2. Administrative Processing of Complaints: There have been 12 hearings before the EEOC and 30 more are expected. The Office expects to comment on 35 recommended decisions, and to review 30 proposed dispositions. The Office assisted the Department in drafting the final agency decision in one case. The Office also drafted a check list for use by EEO officials in making determinations to accept/reject a complaint. The Office is working on means to improve overall communications with OEO. If the role of the Solicitor's Office on complaints is expanded, the office anticipate an increase in the work involved with accept/reject decisions and in appeals before EEOC.

3. Section 504 Handicap Regulations: Six complaints arising out of the implementation of the section 504 regulations are expected.

4. Class Actions: The Office anticipates that EEOC will accept two class action complaints for further processing and initiation of legal proceedings.

5. Financial Assistance Programs: It is anticipated that legal assistance will be provided in ten cases involving discrimination prohibitions under Title VI, the Rehabilitation Act and the Age Discrimination Act. Legal assistance will also be required as legal questions are raised by the bureaus concerning the administration of these programs including the impact of the Civil Rights Restoration Act.

6. Implementation of New Department Manual Chapter: It is expected that the new Departmental Manual Chapter revising the equal opportunity provisions will be issued. Further legal assistance will be necessary after issuance in interpreting and implementing this new chapter.

7. Attorney Fees: Forty new attorney fee claims are anticipated. The Office believes that there will be disagreements in eight cases which will lead to further litigation either at the administrative level, an appeal to the EEOC, or in the courts.

8. Title IX Regulations: It is anticipated that these regulations, which were submitted to the Department of Justice for review, will be issued as proposed rules and that legal assistance will be necessary in investigating several new complaints.

9. New EEOC Regulations: On October 31, 1989, the EEOC issued proposed regulations which will completely revise the complaint processing system of Interior and other agencies. The Office is reviewing the proposed regulations. If they are issued as final rules, the Office anticipates additional legal assistance will be needed by OEO in implementing them.

10. Civil Rights Restoration Act: The Office expects to work with the Department of Justice to develop language incorporating the Act's requirements in the Department of the Interior's financial assistance regulations.

11. Interest on Back Pay: The Office anticipates that several cases will be filed challeging our reliance on advice of the Department of Justice on this issue.

12. Training: The Office is starting a pilot project to provide training to regional and field attorneys on presentations at EEOC hearings. The Office has also begun a project to produce a field manual on EEO complaint processing and EEOC hearing procedures.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

The trend of increasing civil litigation each year over the past several years is expected to continue so that there may be 42 cases in active court litigation. At least nine trials are expected. The Office anticipates a continued increase in the number of Title VII proceedings at the administrative level and that approximately 60 hearings will be held before EEOC Administrative Judges requiring representation by the Solicitor's Office. Novel issues are anticipated in discrimination complaints involving contagious diseases such as AIDs. Litigation is expected on the question of the payment of interest in discrimination cases. The regulations concerning the section 504 requirements and age discrimination will have been in place for about three years and it is anticipated that the complaint workload under these regulations requiring legal review will increase to 15 complaints. The new EEOC regulations on Title VII procedures and Departmental Manual provisions will generate requests for legal advice. The expanded role of the Solicitor's Office in complaints processing will generate work in reviewing accept/reject decisions, proposed dispositions and final agency decisions as well as drafting briefs in cases pending at EEOC. The Office anticipates that the Title IX regulations will be issued as final rules and that additional legal work will be necessary to implement these regulations. About 40 new attorney fee claims requiring legal review are anticipated. Requests for legal advice and training are expected to continue at a high level in view of the various programmatic changes such as the decentralization efforts, the impact of the Civil Rights Restoration Act and the revised Departmental Manual release on equal opportunity, and the new EEOC regulations. The Office anticipates 10 separate training projects. Based on past experience, the Office expects at least two new class action cases will be filed at the administrative level and one class action case to be filed in court. Because of the Civil Rights Restoration Act's expanded definition of "programs and activities," twelve new cases involving recipients of financial assistance are anticipated.

POLICY, BUDGET AND ADMINISTRATION
Client

BASE ACTIVITIES:

The Assistant Secretary--Policy, Budget, and Administration (PBA) is responsible for deciding all appeals to the Department from initial denials of information under the Freedom of Information Act (FOIA) and the Privacy Act. The Solicitor's Office provides advice detailing the legal bases for release or withholding of information.

The Assistant Secretary is responsible for oversight of the Department's regulatory reform and planning programs, coordination with OMB under Executive Order 12291 and implementation of the Paperwork Reduction Act. The Solicitor's Office provides legal advice to assist in carrying out these responsibilities.

The Department's designated ethics official requires regular legal service arising from the Ethics in Government Act, the Executive Order covering employee conduct, the criminal provisions of 18 U.S.C. Sections 201-209, the specific prohibitions contained in various Bureau organic statutes, and the Department's employee conduct regulations.

The creation, chartering, and continued operation of various advisory committees within the Department entails frequent legal counsel. This includes assuring that statutory authority for committees exists, that the committees are structured in accordance with that authority, that the certification and chartering requirements of Section 9 of the Federal Advisory Committee Act are followed, and that the committees continue to function in accordance with various legal requirements.

The Department and its bureaus require legal advice in complex and significant personnel cases. Representation is provided by the Solicitor's Office in proceedings before the Merit Systems Protection Board (MSPB); in labor-management proceedings before third parties, such as the Federal Labor Relations Authority, the Federal Service Impasses Panel; and arbitrators and courts in cases arising under the Civil Service Reform Act.

The Assistant Secretary is responsible for overseeing formulation and implementation of the Department's budget. The Solicitor's Office advises on appropriation law questions raised during the budget formulation process, as well as legal questions of budget execution.

The Assistant Secretary's Office drafts regulations relating to government property and contracts; and determines departmental policy with regard to contracting, grants, cooperative agreements, and government property. The Solicitor's Office is frequently consulted by various Interior bureaus and offices regarding government property problems, and is involved in reviewing new regulations and legislative proposals from both the Department and government sources outside the Department. The Office is also consulted on the application of policy and regulations to various specific problems which arise from time to time.

The Director of the Office of Acquisition and Property Management makes mistake-in-bid determinations, with the advice of the Solicitor's Office. Also, the Director provides liaison on technical matters on General Accounting Office (GAO) bid protests; the Office of the Solicitor is responsible for filing protest reports to the GAO.

The Assistant Secretary's Office is responsible, on behalf of the Secretary, for policy supervision and direction of the Office for Equal Opportunity. The Solicitor's Office provides legal advice and counsel to the Assistant Secretary's Office with respect to issues that arise in discharging these responsibilities.

The Assistant Secretary's Office, through the Office of Environmental Affairs (OEA) is responsible for the Department's day-to-day implementation of environmental laws, including the National Environmental Policy Act (NEPA), the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. The Solicitor's Office works closely with OEA in regulatory development and implementation, review of interagency environmental impact statements, and statutory enforcement.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. FOIA Appeals: The Office continued its preparation of legal opinions on over 100 FOIA appeals, including opinions on new legal issues raised by the changes made to the Freedom of Information Act by the Freedom of Information Reform Act of 1986. The Office also provided assistance to the Department of Justice in court cases arising from appeal decisions. These included Babcock v. Department of the Interior, a case involving disclosure of draft Fish and Wildlife Service biological opinions, and Sierra Club Legal Defense Fund v. Department of the Interior, involving fee waiver standards. The Office continued publication of a periodic FOIA update to apprise bureau FOIA Officials of legal developments. The Office assisted the Department's newly-appointed FOIA Officer in developing a Departmental FOIA handbook.

2. Personnel Cases: The Office represented the Department's bureaus before the Merit Systems Protection Board, as well as in employee grievance cases before the Office of Hearings and Appeals. In addition to a general increase in the number of contested personnel cases, the development of an extensive body of administrative and judicial precedent as a result of the Civil Service Reform Act increased the need for attorney representation in personnel cases.

3. Advisory Committee Charters: Creation of new advisory committees, as well as requirements for renewing existing committee charters, required review of approximately 100 advisory committee charters as well as advice to advisory committee officers of the bureaus. The Office began a revision of part 308 of the Departmental Manual in light of revised GSA advisory committee regulations. The Office also assisted the Departmental Committee Management Officer in preparing the Department's response to an OMB initiative requiring the Department to review its advisory committees and assess which committees should be retained and which should be terminated.

4. Debt Collection: The Office provided legal advice regarding the Federal Claims Collection Act of 1966, as amended by the Debt Collection Act of 1982. The need for this advice continued to grow, as the Department increased its debt collection efforts.

5. Ethics: The Office provided advice on specific ethics questions posed by the Department's Designated Agency Ethics Official (DAEO) and other officials of the Department.

6. Personal Liability: The Office assisted the Department of Justice in representing federal officials who were sued in their personal capacities for their official activities and advised federal officials regarding potential liability. Training on personal liability issues, including the effect of the Federal Employee Liability Reform and Tort Compensation Act of 1988, was provided to Departmental employees.

7. Labor-Management Relations: The Office advised on approximately 100 labor-management cases at both the judicial and administrative level. Advice was provided and documents drafted in a series of pending unfair labor practice and arbitration cases involving such issues as: (a) termination of Sunday premium pay for negotiated wage employees; (b) exemption of lower level supervisors' recommendations from disclosure in grievances as management's labor relations guidance; and (c) exceptions to interest arbitration award adding a 2 percent bonus to basic wage rates contrary to prevailing practice.

This Office prepared briefs and conducted oral argument in the Court of Appeals seeking review of two Federal Labor Relations Authority decisions on the following issues: whether a Sunday premium pay proposal and a "save pay" proposal are negotiable under section 704 of the Civil Service Reform Act (5 U.S.C. 5343 note) when they were not negotiated and were not prevailing practices. The Department's motion to dismiss a request for attorneys fees was granted based on an arbitration award granting travel and per diem. The Office prepared a letter to the Department of Justice seeking an appeal of part of the decision of the District Court for the Northern District of Texas in Baird v. Sonnek concerning application of wage caps to supervisory employees. The Office provided assistance to the Department of Justice in a case in the District Court for Colorado, IBEW v. Lujan, brought by 10 local unions seeking to enjoin the Department's drug testing program, on constitutional and collective bargaining grounds.

The Office provided several memoranda concerning the negotiability of proposals on impact and implementation bargaining over the Department's Drug Free Workplace Plan. The Office also filed briefs in at least five negotiability appeals before the Federal Labor Relations Authority challenging management's determination that certain proposals involving drug testing are nonnegotiable. The Office also drafted briefs in three arbitration cases on the termination of Sunday pay and exceptions to one arbitration award.

8. Equal Opportunity: The Office provided advice to the Assistant Secretary on options for resolving a potential class action complaint. The Office participated in discussions and provided background briefing documents defining the role of the Solicitor's Office in EEO issues.

9. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): CERCLA, generally known as Superfund, creates a regulatory framework for cleaning up hazardous waste sites and establishes a fund to finance governmental clean-ups of those sites. The Office provided legal advice and assistance in order to facilitate the timely filing of claims against persons and corporations who are liable for hazardous waste releases which injure natural resources on Interior-administered lands. The Office also provided legal opinions, drafted regulations and assisted the Department of Justice in the defense of litigation brought against the Department.

10. Equal Access to Justice Act: The Office represented the Department in administrative proceedings and assisted the Department of Justice in court actions with regard to such claims filed against the Department.

11. Rulemaking: The Office provided advice to the Assistant Secretary and the bureaus and offices concerning the Administrative Procedure Act, E.O. 12291, the Regulatory Flexibility Act, and regulatory reform activities. The Office also reviewed for legal sufficiency bureau and office rulemaking documents prior to publication in the Federal Register.

12. Drug-Free Workplace Program and Drug Enforcement Policy: The Office continued to provide guidance in the development of the Department's Drug-Free Workplace Program, in accordance with Executive Order 12564. The Office provided assistance to the Department of Justice in litigation brought to block implementation of the Program. A preliminary injunction blocking random testing and limiting reasonable suspicion testing was issued in January 1989, in two combined cases, Bangert v. Lujan and NFFE v. Lujan. The Office provided guidance concerning continued implementation of the Drug-Free Workplace Program under the terms of the injunction. Additionally, the Office provided guidance regarding implementation of the Drug Enforcement Policy, which involves inter-bureau enforcement of anti-drug laws on public lands administered by the Department.

13. Exxon Valdez Oil Tanker Accident: The Office provided continuing legal advice concerning budgeting and appropriations issues arising from the spill. The Office also advised concerning the interpreting of the various statutes providing for damages for losses caused by the oil tanker accident.

14. Procurement Ethics: The Office assisted with training in, and implementation of, the new amendments of the Office of Federal Procurement Policy Act. Approximately 70 percent of the Department's employees will be subject to the requirements of this Act which has been suspended for one year.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. FOIA Appeals: Based on the number of appeals received and processed in previous years, the Office expects to prepare legal opinions on over 110 FOIA appeals. The Office will continue to resolve new legal issues created by 1986 changes to the FOIA. The Office will continue to provide assistance to the Department of Justice in court cases arising from appeal decisions.

2. Personnel Cases: The Office anticipates a continued increase in the number and complexity of appeals being taken to the Merit Systems Protection Board and of grievances being heard by the Office of Hearings and Appeals.

Therefore, the Office expects an increase in the level of representation activities. The Office will also continue to provide advice to bureaus during the preparatory stages of adverse actions in order to minimize litigation risks in those actions.

3. Advisory Committee Charters: The Office will continue to provide advice on the requirements of the Federal Advisory Committee Act. This will include the review for legal sufficiency of over 75 advisory committee charters, and the provision of training to departmental personnel on the revised committee management provisions.

4. Debt Collection: Continued legal advice regarding the authorizing statutes and procedural requirements will be necessary on the Department's debt collection efforts.

5. Ethics: The Office will assist the Department's Deputy Agency Ethics Official in commenting on draft regulations developed by the Office of Government Ethics to implement the Ethics Reform Act of 1989 and E.O. 12674 ("Principles of Ethical Conduct for Government Officers and Employees"). It is also anticipated that departmental procedures will have to be conformed to the proposed Government-wide Ethics Act of 1989, if it is enacted. Training on the new regulations and procedures will also be provided. The Office will also continue to provide legal advice on ethics questions posed by the Department's Designated Agency Ethics Office and other departmental officials, and will continue to provide advice on the revision of the Department's responsibilities and conduct regulations.

6. Personal Liability: The Office will continue to assist the Department of Justice in representing federal officials who are sued in their personal capacities for their official activities, and advise federal officials concerning potential liability.

7. Equal Access to Justice Act: The Office will continue its representation of the Department and provide assistance to the Department of Justice with regard to claims for attorney fees and expenses filed under the Act.

8. Rulemaking: A considerable amount of advice concerning Executive Order 12291, the Paperwork Reduction Act and the regulatory planning process is expected to continue. Review of bureau and office rulemaking documents prior to submission to the Federal Register is also expected to continue.

9. Labor-Management Relations: It is anticipated the unions will seek attorney fees in unfair labor practice/arbitration cases where they may have substantially prevailed. The Office is representing management in a pending arbitration case affecting negotiated wage employees. These involve work jurisdiction, classification of positions and assignment of work. It is anticipated that the Department of Justice will appeal to the circuit courts several more FLRA decisions in negotiability and unfair labor practice cases involving the termination of Sunday premium pay and union proposals on drug testing. The Office will prepare the appeal briefs and present the oral argument in the circuit courts. The Office will also prepare the briefs and present oral argument in Baird v. Sonnek (5th Circuit), a case involving application of pay cap laws to supervisors under special schedules. The Office will provide training to Labor-Management Relations officials on legal

developments. Additional proposals and contracts involving drug testing impact and implementation bargaining negotiated at the local level will be reviewed for negotiability and legal sufficiency. Overall involvement in about 120 labor management cases at the administrative and judicial level is anticipated.

10. Drug Enforcement Policy and Drug-Free Workplace Program: The Office will provide advice on the ongoing implementation of the program and the policy consistent with the injunction in Bangert v. Lujan or any modification thereto.

11. Equal Opportunity: The Departmental Manual directives, new EEOC directives and new policy initiatives on equal opportunity will generate legal issues concerning the processing and resolution of complaints of particular interest to the Assistant Secretary. The Office is also advising the Deputy Assistant Secretary, who is an acting EEO officer in cases where necessary to avoid conflict issues.

12. Exxon Valdez Oil Tanker Accident: The Office anticipates a continuing need for legal advice concerning appropriations and damages issues arising from the oil tanker accident.

13. Bid Protests and Mistakes-in-Bids: GAO's revised bid protest regulations, effective January 15, 1988, have expanded discovery and hearing procedures, with the potential for significantly increasing the workload of the Office. Additionally, the Office has responsibility for bid protests concerning automated data processing procurements which are filed with the General Services Board of Contract Appeals. Also, this Office reviews mistakes-in-bids before execution.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. FOIA Appeals: The Office anticipates the need to prepare legal opinions on 100 or more appeals, and to continue assisting the Department of Justice in defending against suits challenging appeal decisions.

2. Personnel Cases: The Office anticipates a continued increase in the number of MSPB and OHA cases in which representational services will be provided.

3. Labor-Management Relations: Drug testing may give rise to various legal issues requiring oral and written legal advice and representation before third parties involving the negotiability of union proposals, impact and implementation bargaining, and grievances involving bargaining or discipline. The Office anticipates that several decisions of the Federal Labor Relations Authority will be appealed to the circuit courts requiring Office input in preparing briefs and oral argument. Representation by the Office is anticipated in numerous third-party cases including arbitrations, negotiability disputes, Impasses Panel proceedings and unfair labor practice proceedings. Also, an expanding role for the Office in participating in contract negotiations is anticipated along with providing training for Labor-Management Relations officials. In view of a recent Tenth Circuit decision determining that mixed units of supervisors and nonsupervisors were improper, it is anticipated that affected bureaus will need legal representation defending management's actions in dealing with supervisors represented by a union.

4. Advisory Committee Charters: The Office will continue to review for legal sufficiency approximately 100 advisory committee charters and to provide advice to departmental officials concerning the requirements of the Federal Advisory Committee Act.

5. Equal Opportunity: The Office anticipates that legal advice and counsel will be provided to the Assistant Secretary concerning several discrimination cases that raise particularly sensitive issues or cut across bureau lines. The Assistant Secretary or a Deputy will receive advice on cases they are handling personally, so as to avoid conflict questions.

6. Debt Collection: Continued legal advice concerning statutory and procedural requirements will be necessary.

7. Ethics: The Office will assist the Designated Agency Ethics Official in implementing departmental regulations to supplement Government-wide regulations implementing the Ethics Reform Act of 1989 and E.O. 12674 ("Principles of Ethical Conduct for Government Officers and Employees"). Training on the new regulations and procedures will also be provided. The Office will continue to provide ethics advice to departmental officials. The Office will also continue to provide legal advice on ethics questions posed by the Department's Designated Agency Ethics Office and other departmental officials, and will continue to provide advice on the revision of the Department's responsibilities and conduct regulations.

8. Personal Liability: The Office will continue to assist the Department of Justice in representing federal officials who are sued in their individual capacities, and to provide advice to federal officials about potential liability.

9. Equal Access to Justice Act: The Office will continue to represent the Department and to provide assistance to the Department of Justice in suits seeking attorney fees under this Act.

10. Rulemaking: The Office will continue to provide rulemaking advice to departmental officials.

11. Exxon Valdez Oil Tanker Accident: The Office anticipates a continuing need for advice concerning the oil tanker accident.

12. Drug Enforcement Policy and Drug-free Workplace Program: The Office anticipates a continued need for legal advice concerning the policy and program, as well as for litigation activities.

13. Bid Protests and Mistakes-in-Bids: The Office will continue to provide advice in these areas of responsibility.

OFFICE OF THE SECRETARY
Client

BASE ACTIVITIES:

The Office of the Secretary receives legal advice and counsel on numerous matters which are not directly attributable to the programs or activities of a particular bureau or office. Generally, this advice is centered around problems arising out of the administrative operation of the Secretary's Office, such as Freedom of Information Act (FOIA) requests, personnel, travel, and departmental organization. The Office of the Secretary also frequently calls on the Office of the Solicitor to respond to congressional correspondence raising legal issues and to review and comment on secretarial issue documents and other policy papers.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Research and Development: The Executive Order requiring implementation of the Technology Transfer Act of 1986 required new rules and regulations to implement the new responsibilities and authorities placed on the Department. The Order affects not only persons concerned with research and/or development in laboratories but those concerned with procurement and personnel matters. The Office provided legal advice on the Department's responsibilities under the law, the Executive Order and the regulations.

2. Indian Preference: The Office prepared a memorandum from the Solicitor to the Secretary advising that the Indian Preference Act applies only to the Bureau of Indian Affairs (BIA). In fiscal year 1988, a suit was filed in federal court contending that the Indian Preference Act applies to the Office of Construction Management, which is not a part of BIA. The case was resolved in fiscal year 1989 by a decision upholding the Solicitor's interpretation.

3. Reorganization: The Office advised the Secretariat, including the Secretary and his immediate office, on questions that arise concerning departmental authority, reorganization and other matters typically raised by a new administration.

4. TAPS Fund: The Office provided legal advice to the Office of the Secretary concerning the TAPS Fund's role in paying damage claims arising from the Exxon Valdez tanker accident. The Office also advised concerning the investment strategies the Fund's Board of Trustees may use regarding the money in the TAPS Fund.

5. Secretarial Participation in Fundraising Events: The Office provided guidance to the Office of the Secretary concerning the statutory and ethical factors that should be considered in determining whether it is appropriate for the Secretary to participate in fundraising activities.

6. FOIA: The Office assisted in coordinating requests received from the NRDC and an Alaska law firm for documents concerning the Exxon Valdez tanker accident. The requests involved most department bureaus and thousands of documents. Because of the Department of Justice (DOJ) interest in this issue, the Office also coordinated with DOJ on these requests.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

The Solicitor's Office will continue to meet the needs of the Office of the Secretary, as they arise, including the following:

1. Holocaust Council: The Office, under a memorandum of understanding, continues to provide legal advice to the Council, including legal advice on procurement issues associated with construction of the Holocaust Museum.

2. TAPS Fund: It is anticipated that continued legal advice to the Secretary and the federal members of the TAPS Fund Board will be necessary regarding the TAPS Fund's role in paying damage claims arising from the Exxon Valdez tanker accident, as more suits seeking damages are filed and cases already filed progress into discovery and trial. It is also expected that it will be necessary to provide continuing advice regarding the Fund's investments. Further, should Congress enact legislation amending the statutory foundation of the TAPS Fund, legal advice concerning the new legislation's meaning and impact will be necessary.

4. FOIA: The Office will continue to provide advice and assistance regarding requests for documents concerning the Exxon Valdez tanker accident.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. TAPS Fund: Continued legal advice concerning the TAPS Fund will be required.

OFFICE OF THE SOLICITOR
Client

BASE ACTIVITIES:

Aside from responsibility for legal services to the Department, the Solicitor's Office has the primary responsibility for deciding the Department's final position for approximately 70 bid protests before the General Accounting Office (GAO) and the General Services Administration (GSBCA). This involves developing reports, liaison, and adversary hearings before the GAO and GSBCA. Also, the Office is responsible for all bid protest litigation filed before the U.S. District Courts and the Claims Court. In addition, the Office faces legal questions arising from its work, such as personnel actions, Freedom of Information Act issues, tort claims, and equal opportunity claims. Most of the legal advice and/or representation activity needed for these cases is supplied by the Division of General Law.

FY 1989: MAJOR LEGAL PROJECTS COMPLETED:

1. Bid Protests: In fiscal year 1989, the number of bid protests filed at GAO and the General Services Board of Contract Appeals remained fairly consistent with the figures for the same period in fiscal year 1988. During fiscal year 1989, the Office received approximately 70 separate bid protests.

2. Contract Review: Contracts are reviewed for legal sufficiency for all Department bureaus and offices by the Office of the Solicitor on a preagreement basis. Each Bureau has established a contract review policy, in coordination with the Office of the Solicitor, based on the number and dollar amount of contracts awarded. Also, certain other matters are reviewed, such as unusual contracts regardless of dollar amount, default actions, GAO protests, significant amendments, etc.

3. Federal Technology Transfer Act: In connection with the new Executive Order 12591, a considerable effort in conjunction with the Assistant Secretary for Water and Science and the Bureau of Mines was made to implement the new law.

4. Hazardous Substances Task Force: The task force completed a Secretarial Order on land acquisition and continued to advise on Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA) and Resource Conservation and Recovery Act (RCRA).

5. Tort Claims: The Office considered and issued determinations in administrative claims presented under the Federal Tort Claims Act (28 U.S.C. sections 1346(b) and 2671-2680); and the Military Personnel and Civilian Employees' Claims Act of 1964 (31 U.S.C. 3721, as amended). Approximately 85 per cent of the claims presented under the two Acts arise under the Federal Tort Claims Act. The majority of the tort claims arise from motor vehicle accidents which include claims for property damage and personal injury. The second largest number of claims is for personal injury which arises from slip and falls on property under the jurisdiction of the federal government.

6. Procurement Ethics: The Office advised all of the bureaus and offices participated in training and the drafting of regulations under the Procurement Ethics Act before its suspension.

7. Solicitor's Manual: Four revisions to the Manual were issued.

FY 1990: MAJOR LEGAL PROJECTS INITIATED OR ANTICIPATED:

1. Bid Protests: With GAO's revised bid protest regulations now in effect, the Office anticipates an increase in the legal workload required for each protest, in view of the expanded discovery and hearing procedures proposed.

2. Federal Technology Transfer Act: Efforts will continue to implement this law.

3. Program Fraud Civil Remedies Act: A significant workload is anticipated under this Act involving civil penalty and assessment cases against persons who make false statements or fraudulent claims against the government. Significant efforts will be required in prosecution of civil penalty and assessment cases under this Act.

4. Tort Claims: The Office will continue to process tort claims and litigation.

5. Hazardous Substances Task Force: The task force will continue to advise on Departmental issues involving CERCLA, SARA and RCRA.

6. Civilian Agency Acquisition Council: A member of the Office chairs the indemnification subcommittee, which advises the Council. The principal activity of the subcommittee is providing advice on revision of a contract clause that requires agencies to pay for uninusured risks over the ceiling amount of the contract.

FY 1991: MAJOR LEGAL PROJECTS ANTICIPATED:

1. Bid Protests: The Office anticipates that an increase in the legal workload required for each protest will continue, in view of the expanded discovery and hearing procedures proposed.

2. Federal Technology Transfer Act: Efforts will continue to implement this law.

3. Program Fraud Civil Remedies Act: The Office anticipates that it will continue to be active in the prosecution of civil penalty and assessment cases under this Act.

4. Hazardous Substances Task Force: The task force will continue to advise on Departmental issues involving CERCLA, SARA and RCRA.

Quantitative Workload Data

Data on attorney-time is collected from the Solicitor's management information system and used to provide workload data projections for fiscal years 1989, 1990 and 1991. Paralegal-time and overtime are also reflected in the total attorney-years shown in the following tables. Workload data for the Solicitor, Deputy Solicitor, Special Assistant, and Associate Solicitors are not included as their time is not easily identifiable to specific legal categories. Full absorption of the 1990 pay raise will result in there being 8 fewer attorneys on board at the end of FY 1990 than anticipated at the FY 1990 enacted level. With an adjustment for full-year 1991 cost of the 1990 pay raise, the Office proposes an increase of 4 attorney positions for FY 1991.

Fourteen legal categories describe the average time devoted to an item in a given legal category. The legal categories are:

Litigation (Administrative) Surface Mining - Each legal item represents either a formal administrative hearing conducted by an Administrative Law Judge or an appeal to the Interior Board of Land Appeals. The legal work involves reviewing and preparing pleadings, investigating facts, interviewing witnesses, traveling to and inspecting mine sites, attending hearings, examining and cross-examining witnesses, preparing post-hearing motions, briefs, and orders, and conducting legal research and preparing briefs to be filed with the Appeals Board. The Surface Mining Control and Reclamation Act of 1977 provides a dual review mechanism in its administrative hearing process. Consequently, the Solicitor's Office is required to prepare for two kinds of challenges, (1) to establish the fact of the violation and (2) sustain the amount of the proposed civil penalty assessment for the violation. The average hours per item in this category is twenty-eight.

Litigation (Administrative) Other - Each legal item represents a formal administrative hearing and other proceedings conducted by hearing examiners, Administrative Law Judges and Boards of Appeals. The legal work may involve reviewing and preparing pleadings, investigating facts, interviewing witnesses, attending hearings, examining and cross-examining witnesses, preparing post-hearing orders and motions, conducting legal research and preparing post-hearing briefs. Cases involve matters such as personnel grievances, tort claims, mining claims, Indian claims, patent disputes, discrimination complaints, labor disputes, and contract claims and disputes. The average hours per item in this category is twenty-eight.

Litigation (Judicial) Surface Mining - Each legal item represents a case presented before a Federal District Court or Court of Appeals. A certain percentage of decisions from administrative litigation will be appealed and result in judicial proceedings. Moreover, a large number of cases are filed on behalf of the Office of Surface Mining in Federal Court to enforce cessation orders and to collect delinquent civil penalties and unpaid abandoned lands reclamation fees. Virtually all of this litigation is handled by Solicitor's Office attorneys acting as Special Assistant U.S. Attorneys. Thus, unlike other types of litigation handled by the Office where the Office is primarily responsible only for the preparation of a litigation report, in these cases the Office conducts the entire litigation. The average hours per item in this category is twenty-seven.

Litigation (Judicial) Condemnation Cases - This category involves the same procedures as "Litigation (Judicial)"; however, the subject matter is limited to the acquisition of real property for the United States, for an Interior-related program. The types of action may be initiated by filing of a complaint, a declaration of taking, or an inverse condemnation action. The average hours per item in this category is one.

Litigation (Judicial) Other - Each legal item represents a case presented before a Federal District Court Judge, or an appeal of a decision rendered by such a Claims Court Judge. Judicial proceedings administered by this Office involving matters concerning all Departmental related programs, including the administrative adjudications that are also challenged judicially. The average hours per item in this category is twenty-seven. In the Southwest Region, Judicial Litigation, Other, consists of probate proceedings and will hearings that require about four hours per item.

Counseling - Each legal item represents providing oral legal advice to a client. Counseling actions may be initiated by this Office to anticipate legal problems which will confront the client or in response to specific requests made by the client for interpretive or other legal advice. The average hours per item in this category is one-half.

Review of Regulations - This category represents the total number of regulations being drafted, requiring revision or awaiting legal review within the various organizational components of the Solicitor's Office. The average hours per item in the category is eight.

Review of Legislation - This category includes all pieces of legislation awaiting legal review or drafting by the Solicitor's Office staff. The average hours for the review of legislation is nine.

Review of Administrative Proceedings - This category includes all proceedings before Departmental hearing boards involving the client bureaus for which the Solicitor's Office provides legal counsel. Additionally, it includes tort claims to be resolved without litigation. The average hours per item is eight.

Arbitration and Negotiation - Each legal item represents attorney participation in the discussion of matters involving the settlement of cases not in litigation, negotiation of contracts or cooperative agreements, and the resolution of inter-agency or intra-Departmental disputes. The average hours per item is fourteen.

Opinion Memoranda - Each legal item represents written legal opinions based upon review of statutes, legislative history or judicial decisions that are rendered when oral advice alone is not satisfactory. The average hours per item in this category is eight.

Title Review - This category includes a review of all preliminary and final title opinions issued throughout the Solicitor's Office and those issued by the Department of Justice. The average hours per item in this category is one-half.

Contract Review - Legal review of procurement actions by the Solicitor's Office contemplates an examination for legal sufficiency of the entire procurement package. The parameters of a legally sufficient procurement package are defined by reference to the Federal and Interior Acquisition Regulations, Comptroller General decisions and judicial interpretations. The Solicitor's legal review examines all potential and actual deficiencies in proposed solicitation, evaluation, and award of the contract. The average hours per item in this category is two.

Administrative and Management - Each item represents time spent on any activity not readily identifiable to a specific legal activity. The average hours per item in this category is two.

Justification of Program and Performance

Activity: General Administration

(dollar amounts in thousands)

		1990 Enacted to date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc.(+) Dec.(-) from Base
General Administration	$	3,877	3,874	3,971	3,971	--
	(FTE)	(30)	(30)	(30)	(30)	--

Impact of Public Law 99-177

	1990 Enacted to date	P.L. 99-177 B.A. Cancellation	1990 Adjusted Approp.
General Administration	3,877	-3	3,874

An adjustment will be made for funds allocated for incentive awards in order to make this reduction.

AUTHORIZATION

43 U.S.C. 1455: "The legal work of the Department of the Interior shall be performed under the supervision and direction of the Solicitor of the Department of the Interior, who shall be appointed by the President with the advice and consent of the Senate."

OBJECTIVES

Provides legal support to the Secretary and the bureaus and offices of the Department, and renders executive and administrative direction and services to the legal staff of the Solicitor's Office.

BASE PROGRAM

General administration includes executive direction, and administrative and central services, including the office-wide costs for the management information system, postage, telecommunications, employee compensation, PAY/PERS and payroll billings, and administrative and consolidated billings.

Executive Direction

Executive direction is comprised of the Immediate Office of the Solicitor and the Associate Solicitors for Conservation and Wildlife, Energy and Resources, General Law, Indian Affairs, Surface Mining and Audit and Investigation. The Immediate Office of the Solicitor includes the Solicitor, a Deputy Solicitor, a Special Assistant, and supporting secretarial staff. The Solicitor is the chief attorney for the Department and the principal legal advisor to the Secretary. The

Solicitor directs the Department's skilled legal staff and is responsible for the legal work of the Department. The Deputy Solicitor acts in the absence of the Solicitor and represents the Solicitor in supervising Associate and Regional Solicitors in connection with all legal, operational and administrative matters as assigned or delegated by the Solicitor and provides legal counsel to the Secretary, Under Secretary, the Secretariat, and the heads of all bureaus and offices. Further, the Deputy Solicitor supervises the Division of Administration.

Associate Solicitors are responsible for legal matters arising in connection with the programs and activities of the bureaus and separate offices which fall within the program areas of their division. For example, the Division of Energy and Resources is responsible for providing legal support to energy and resource-related programs within the Department.

Division of Administration

This Division is responsible for providing and coordinating the administrative and management support services for the Solicitor. The Division includes the Docket and Records Control Branch, the Management Information Systems Branch, the Budget and Accounting Branch, and the Facilities Management Section.

(1) The Docket and Records Control Branch serves as a control center for tracking of correspondence and litigation and is the official file custodian for the Office. The Branch maintains a Table of Cases which is a cumulative index to litigation arising out of decisions made by administrative review boards. The Branch provides other support services to the Office.

(2) The Management Information Systems (MIS) Branch is responsible for the management information program. The Branch develops, operates, and maintains the Office of the Solicitor's management information systems; and provides training and technical guidance to the Divisions and Regions. The MIS implementation is progressing, with training virtually complete. Attorney timekeeping, correspondence tracking and electronic mail systems are operational. Analysis of some enhancements to the System was conducted in fiscal year 1989 and will continue through fiscal year 1991.

(3) The Budget and Accounting Branch is responsible for the financial management program. The program includes preparation of budget reports and justifications, allocation of resources to Divisions and Regions, monitoring of budget execution, and preparation of financial forecasts and accounting reports. The Branch also provides guidance to Divisions and Regions on financial regulations and procedures.

(4) The Facilities Management Section manages the facilities and mechanical operation for the Office. The section provides services such as property management and utilization, space management, supplies management and mail and distribution services.

OFFICE OF THE SOLICITOR
WORKLOAD ANALYSIS

TABLE 1 - FISCAL YEAR 1989

	Litigation														Total	
	Administrative		Judicial													
	Surface Mining	Other	Surface Mining	Condemnation Cases	Other	Counseling	Review of Regulations	Review of Legislation	Review of Admin Proc.	Arbitration and Negotiation	Opinion Memoranda	Title Review	Contract Review	Admin and Management	Items/ Atty. Yr. Usage	Attorneys Available End of Yr.
CONSERVATION & WILDLIFE																
Legal Items	0	2	0	666	182	5,824	203	122	69	7	1,485	291	354	4,638	13,823	
Attorney Years	.00	.03	.00	.32	2.36	1.40	.78	.53	.19	.05	5.71	.07	.34	4.46	16.2	16
ENERGY & RESOURCES																
Legal Items	0	123	0	0	538	18,512	127	331	52	10	1,651	1,664	364	5,470	28,846	
Attorney Years	.00	1.65	.00	.00	6.98	4.45	.49	1.45	.20	.07	6.35	.40	.35	5.26	27.7	27
GENERAL LAW																
Legal Items	0	334	0	0	216	10,816	208	374	218	0	920	0	1,300	5,429	19,765	
Attorney Years	.00	4.50	.00	.00	2.80	2.60	.80	1.40	.84	.00	3.54	.00	1.25	5.22	23.0	24
INDIAN AFFAIRS																
Legal Items	0	78	0	0	350	4,534	351	224	174	82	983	0	416	4,940	12,132	
Attorney Years	.00	1.05	.00	.00	4.54	1.09	1.35	.97	.67	.55	3.78	.00	.40	4.75	19.2	17
SURFACE MINING																
Legal Items	302	0	1,189	0	0	20,093	501	25	3	1	1,030	42	260	18,980	42,466	
Attorney Years	4.06	.00	16.00	.00	.00	4.83	2.00	.11	.01	.01	3.96	.01	.25	18.25	49.5	49
AUDIT & INVESTIGATION																
Legal Items	0	0	0	0	15	1,706	16	44	0	0	83	0	0	166	2,030	
Attorney Years	.00	.00	.00	.00	.20	.41	.06	.19	.00	.00	.32	.00	.00	.16	1.3	1
ALASKA REGION																
Legal Items	0	73	0	0	138	1,706	16	3	36	0	489	416	281	1,602	4,757	
Attorney Years	.00	.98	.00	.00	1.79	.41	.06	.00	.14	.00	1.88	.10	.27	1.54	7.2	7
SOUTHEAST REGION																
Legal Items	0	60	0	146	28	291	3	0	130	0	268	1,914	146	1,810	4,796	
Attorney Years	.00	.81	.00	.07	.36	.07	.01	.00	.50	.00	1.03	.46	.14	1.74	5.2	5
NORTHEAST REGION																
Legal Items	0	62	0	208	54	2,330	3	2	114	1	260	1,165	187	1,404	5,790	
Attorney Years	.00	.83	.00	.10	.70	.56	.01	.01	.44	.01	1.00	.28	.18	1.35	5.5	5
ROCKY MOUNTAIN REGION																
Legal Items	0	222	0	208	299	2,787	91	62	55	0	777	832	863	5,356	11,552	
Attorney Years	.00	2.99	.00	.10	3.88	.67	.35	.27	.21	.00	2.99	.20	.83	5.15	17.6	14
PACIFIC NORTHWEST REGION																
Legal Items	0	312	0	208	567	8,320	52	9	260	0	1,495	2,122	520	8,424	22,284	
Attorney Years	.00	4.20	.00	.10	7.30	2.00	.20	.04	1.00	.00	5.75	.51	.50	8.10	29.7	24
PACIFIC SOUTHWEST REGION																
Legal Items	0	98	0	83	149	3,578	13	7	140	1	569	2,205	894	3,536	11,273	
Attorney Years	.00	1.32	.00	.04	1.93	.86	.05	.03	.54	.01	2.19	.53	.86	3.40	11.8	11
INTERMOUNTAIN REGION																
Legal Items	0	85	0	333	203	1,456	16	9	99	80	1,123	1,456	759	4,462	10,081	
Attorney Years	.00	1.15	.00	.16	2.63	.35	.06	.04	.38	.54	4.32	.35	.73	4.29	15.0	15
SOUTHWEST REGION																
Legal Items	0	172	0	312	2,410	5,242	148	7	60	15	1,097	4,035	520	5,002	19,080	
Attorney Years	.00	2.32	.00	.15	4.75	1.26	.57	.03	.23	.10	4.22	.97	.50	4.81	19.9	17
TOTALS																
Legal Items	302	1,621	1,189	2,164	5,204	87,195	1,748	1,175	1,350	197	12,230	16,142	6,864	71,219	208,675	
Attorney Years	4.1	21.8	16,5	1.0	40.2	21.0	6.8	5.1	5.4	1.3	47.0	3.9	6.6	68.5	248.9	232

OFFICE OF THE SOLICITOR
WORKLOAD ANALYSIS

TABLE 2 - FISCAL YEAR 1990

	Litigation															
	Administrative		Judicial												Total	
	Surface Mining	Other	Surface Mining	Condemnation Cases	Other	Counseling	Review of Regulations	Review of Legislation	Review of Admin Proc.	Arbitration and Negotiation	Opinion Memoranda	Title Review	Contract Review	Admin and Management	Items/ Atty. Yr. Usage	Attorneys Available End of Yr.
CONSERVATION & WILDLIFE																
Legal Items	0	37	0	1,040	270	12,480	390	231	130	0	1,040	1,040	260	1,040	17,958	
Attorney Years	.00	.50	.00	.50	3.50	3.00	1.50	1.00	.50	.00	4.00	.25	.25	1.00	16.0	15
ENERGY & RESOURCES																
Legal Items	0	171	0	0	556	18,720	213	335	55	12	1,674	1,706	385	5,470	29,297	
Attorney Years	.00	2.30	.00	.00	7.22	4.50	.82	1.45	.21	.08	6.44	.41	.37	5.26	29.1	26
GENERAL LAW																
Legal Items	0	379	0	0	293	14,144	208	324	182	178	988	0	936	3,224	20,856	
Attorney Years	.00	5.10	.00	.00	3.80	3.40	.80	1.40	.70	1.20	3.80	.00	0.90	3.10	24.2	23
INDIAN AFFAIRS																
Legal Items	0	82	0	0	371	5,990	372	238	185	160	1,040	0	447	4,940	13,825	
Attorney Years	.00	1.11	.00	.00	4.81	1.44	1.43	1.03	.71	1.06	4.00	.00	.43	4.75	20.0	17
SURFACE MINING																
Legal Items	270	0	1,189	0	0	17,680	520	23	0	0	845	0	156	18,720	39,412	
Attorney Years	3.75	.00	16.00	.00	.00	4.25	2.00	.10	.00	.00	3.25	.00	.15	18.00	47.5	47
AUDIT & INVESTIGATION																
Legal Items	0	0	0	0	15	1,747	3	51	0	1	91	0	10	166	2,084	
Attorney Years	.00	.00	.00	.00	.20	.42	.01	.22	.00	.01	.35	.00	.01	.16	1.4	1
ALASKA REGION																
Legal Items	0	97	0	416	154	2,496	13	2	26	7	468	1,248	135	1,664	6,726	
Attorney Years	.00	1.30	.00	.20	2.00	.60	.05	.01	.10	.05	1.00	.30	.13	1.60	8.1	7
SOUTHEAST REGION																
Legal Items	0	89	0	478	21	333	5	2	143	1	260	3,744	146	1,144	6,366	
Attorney Years	.00	1.20	.00	.23	.27	.08	.02	.01	.55	.01	1.00	.90	.14	1.10	5.5	5
NORTHEAST REGION																
Legal Items	0	62	0	208	54	2,330	3	2	114	1	260	1,206	187	1,404	5,831	
Attorney Years	.00	.83	.00	.10	.70	.56	.01	.01	.44	.01	1.00	.29	.10	1.35	5.5	5
ROCKY MOUNTAIN REGION																
Legal Items	0	207	0	728	249	9,942	102	92	44	117	572	1,206	614	1,134	15,067	
Attorney Years	.00	2.79	.00	.35	3.23	2.39	.70	.40	.17	.79	2.20	.29	.59	1.09	15.0	13
PACIFIC NORTHWEST REGION																
Legal Items	0	342	0	416	555	8,320	16	12	260	4	1,300	1,830	520	8,112	21,687	
Attorney Years	.00	4.60	.00	.20	7.20	2.00	.06	.05	1.00	.03	5.00	.44	.50	7.80	28.9	23
PACIFIC SOUTHWEST REGION																
Legal Items	0	327	0	416	154	4,576	10	9	156	6	572	2,163	541	2,184	11,114	
Attorney Years	.00	4.40	.00	.20	2.00	1.10	.04	.04	.60	.04	2.20	.52	.52	2.10	13.8	11
INTERMOUNTAIN REGION																
Legal Items	0	87	0	374	230	1,664	10	17	112	92	1,274	1,622	853	5,054	11,402	
Attorney Years	.00	1.30	.00	.18	2.98	.40	.07	.05	.43	.62	4.90	.39	.82	4.86	17.0	15
SOUTHWEST REGION																
Legal Items	0	260	0	1,040	2,340	8,320	78	23	260	223	910	6,240	520	3,120	23,334	
Attorney Years	.00	3.50	.00	.50	4.50	2.00	.30	.10	1.00	1.50	3.50	1.50	.50	3.00	21.9	17
TOTALS																
Legal Items	270	2,150	1,189	5,116	5,262	108,742	2,031	1,356	1,667	802	11,294	22,005	5,710	57,376	224,979	
Attorney Years	3.8	28.9	16.0	2.5	42.4	26.1	7.8	5.9	6.4	5.4	43.4	5.3	5.5	55.2	254.7	225

OFFICE OF THE SOLICITOR
WORKLOAD ANALYSIS

TABLE 3 - FISCAL YEAR 1991

	Litigation														Total	
	Administrative		Judicial							Arbitration						
	Surface Mining	Other	Surface Mining	Condemnation Cases	Other	Counseling	Review of Regulations	Review of Legislation	Review of Admin. Proc.	and Negotiation	Opinion Memoranda	Title Review	Contract Review	Admin and Management	Items/ Atty. Yr. Usage	Attorneys Available End of Yr.
CONSERVATION & WILDLIFE																
Legal Items	0	37	0	1,044	271	12,120	392	232	131	0	1,044	1,044	261	1,044	18,028	
Attorney Years	.02	.50	.00	.50	3.50	3.70	1.10	1.07	.13	.00	4.00	.25	.25	1.00	16.0	16
ENERGY & RESOURCES																
Legal Items	0	172	0	0	381	20,88[illegible]	218	339	63	12	1,702	1,712	386	5,491	31,551	
Attorney Years	.00	2.10	.00	.00	7.57	[illegible]	.82	1.44	.23	.09	6.52	.41	.37	5.26	30.0	27
GENERAL LAW																
Legal Items	0	401	0	0	302	15,034	209	321	235	174	1,018	0	940	3,236	21,881	
Attorney Years	.00	5.40	.00	.00	3.90	3.60	.80	1.40	.90	1.20	3.90	.00	3.90	5.10	25.1	28
INDIAN AFFAIRS																
Legal Items	0	83	0	0	312	8,121	373	238	181	236	1,044	0	449	4,859	16,051	
Attorney Years	.00	1.11	.00	.00	4.81	1.94	1.43	1.03	.71	1.56	4.00	.00	.43	4.35	21.8	17
SURFACE MINING																
Legal Items	280	0	1,193	0	0	11,788	522	23	0	0	848	0	157	18,792	39,563	
Attorney Years	3.75	.00	16.00	.00	.00	4.25	2.00	.10	.00	.00	3.25	.00	.15	18.00	47.5	47
AUDIT & INVESTIGATION																
Legal Items	0	0	0	0	17	1,837	5	58	0	1	91	0	10	167	* 2,186	
Attorney Years	.00	.00	.00	.00	.22	.44	.02	.25	.00	.01	.35	.00	.01	.16	1.5	1
ALASKA REGION																
Legal Items	0	104	0	418	186	2,504	13	2	26	3	470	1,253	157	1,670	6,812	
Attorney Years	.00	1.40	.00	.20	2.40	.60	.05	.01	.15	.05	1.80	.30	.15	1.60	8.7	7
SOUTHEAST REGION																
Legal Items	0	89	0	898	21	314	5	2	148	1	261	11,275	186	1,148	14,324	
Attorney Years	.00	1.20	.00	.43	.27	.28	.02	.01	.55	.01	1.00	2.70	.19	1.10	7.9	5
NORTHEAST REGION																
Legal Items	0	62	0	209	54	2,319	3	2	111	1	261	1,253	188	1,409	5,896	
Attorney Years	.00	.83	.00	.10	.70	.14	.01	.01	.44	.01	1.00	.30	.18	1.35	5.5	5
ROCKY MOUNTAIN REGION																
Legal Items	0	206	0	752	244	4,981	183	91	44	116	551	1,211	825	1,138	11,484	
Attorney Years	.00	2.76	.00	.36	3.15	2.19	.70	.40	.17	.76	2.11	.29	.79	1.09	15.0	13
PACIFIC NORTHWEST REGION																
Legal Items	0	341	0	418	557	8,112	16	12	261	4	1,305	1,837	322	8,167	21,775	
Attorney Years	.00	4.60	.00	.20	7.20	2.16	.06	.05	1.00	.03	5.00	.44	.50	7.80	18.9	24
PACIFIC SOUTHWEST REGION																
Legal Items	0	328	0	418	155	4,194	19	9	177	6	576	2,172	143	2,192	11,118	
Attorney Years	.00	4.41	.03	.20	2.00	1.11	.08	.09	.63	.08	2.20	.52	.52	2.10	14.8	11
INTERMOUNTAIN REGION																
Legal Items	0	47	0	376	230	1,870	18	12	117	92	1,279	1,629	916	3,074	11,681	
Attorney Years	.00	1.35	.03	.18	2.98	.45	.07	.05	.41	.42	4.90	.19	.42	4.86	17.0	15
SOUTHWEST REGION																
Legal Items	0	276	0	1,044	2,610	8,[illegible]	108	23	241	229	916	6,264	332	3,142	23,126	
Attorney Years	.10	1.70	.00	.57	3.10	[illegible]	.80	.10	1.00	1.10	3.50	1.50	.56	3.05	22.1	17
TOTALS																
Legal Items	280	2,202	1,193	5,577	5,404	115,214	2,067	1,372	[illegible]	919	11,362	24,610	5,962	57,595	239,707	
Attorney Years	3.8	29.5	16.0	2.7	53.7	27.8	8.9	5.9	6.6	5.8	43.5	[illegible]	5.7	55.2	291.0	229

Central Service Costs

Central service costs are overhead operating expenses associated with providing legal services. These costs include postage charges, telephone and communication services, and administrative and consolidated billings for central services provided by the Office of the Secretary. The central services provided to the Office of the Solicitor include personnel services, storage and shipping, general services, printing, security and law enforcement, space management, Departmental management issuances and files, the Departmental Training Center, public affairs, administration and management policy, and budget and fiscal services.

(dollar amounts in thousands)

General Administration		FY 1990 Estimate	FY 1991 Base	FY 1991 Estimate	Inc.(+) Dec.(-) from FY 1990	Inc.(+) Dec.(-) from Base
Executive Direction	$	905	942	942	+37	--
	(FTE-T)	(11)	(11)	(11)	--	--
Division of Administration	$	927	977	977	+50	--
	(FTE-T)	(19)	(19)	(19)	--	--
Central Service Costs:						
FTS		336	336	336	--	--
Benefits for Former Personnel		19	14	14	-5	--
PAY/PERS and Payroll		57	57	57	--	--
Postage		70	80	80	+10	--
Administrative and Consolidated Billings		900	795	795	-105	--
Employee Compensation		80	119	119	+39	--
Dept. Drug Free Workplace			4	4	+4	--
Copy Centers & Dept. Print Plant		105	147	147	+42	--
Subtotal		1,567	1,552	1,552	-15	--
Management Information System		475	500	500	+25	--
Total Requirements	$	3,874	3,971	3,971	+97	--
	(FTE-T)	(30)	(30)	(30)	--	--

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Case 180
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Case 720

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
SALARIES AND EXPENSES

Program and Financing (in thousands of dollars)

Identification code 14-0107-0-1-306	1989 actual	1990 estimate	1991 estimate
Program by activities:			
00.0101 Direct program: Legal services................	24,592	25,305	26,485
10.0001 Total obligations............	24,592	25,305	26,485
Financing:			
25.0001 Unobligated balance lapsing..	94	---	---
40.0001 Budget authority (Appropriation).............	24,686	25,305	26,485
Relation of obligation to outlays:			
71.0001 Obligations incurred, net....	24,592	25,305	26,485
72.0001 Obligated balance, start of year......................	2,891	2,201	2,530
74.0001 Obligated balance, end of year......................	-2,201	-2,530	-2,648
77.0001 Adjustments in expired Accounts..................	-241	---	---
90.0001 Outlays.....................	25,041	24,976	26,367
(Memo cnt: 21.5)	(Memo cnt: 5)	(Memo cnt: 5)	(Memo cnt: 4.9)

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
SALARIES AND EXPENSES

Object Classification (in thousands of dollars)

Identification code 14-0107-0-1-306	19 89 actual	19 90 estimate	19 91 estimate
Direct obligations:			
Personnel compensation:			
111.101 Full-time permanent..........	15,055	15,669	16,403
111.301 Other than full-time permanent..................	610	630	647
111.501 Other personnel compensation.	242	123	143
111.901 Total personnel compensation.	15,907	16,422	17,193
Personnel benefits:			
112.101 Civilian......................	2,865	2,824	3,097
113.001 Benefits for former personnel	20	19	14
121.001 Travel and transportation of persons....................	596	553	523
122.001 Transportation of things.....	12	30	30
123.101 Rental payments to GSA.......	1,132	1,215	1,276
123.301 Communications, utilities, and miscellaneous charges..	602	676	686
124.001 Printing and reproduction....	164	163	175
125.001 Other services...............	2,851	2,813	2,944
126.001 Supplies and materials.......	156	230	214
131.001 Equipment.....................	287	360	333
199.901 Total obligations..........	24,592	25,305	26,485

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Red underscore
Case 210

STANDARD FORM 300
July 1964, Bureau of the Budget
Circular No. A-11, Revised.
300-101

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR

PERSONNEL SUMMARY

Identification code 14-0107-0-1-306	19 89 actual	19 90 estimate	19 91 estimate
Direct obligations:			
Total number of full-time permanent positions........................	337	351	355
Total compensable workyears:			
Full-time equivalent employment...	355	359	359
Full-time equivalent of overtime and holiday hours..............	---	---	---
(Mono cast: 21.5)	(Mono cast: 3)	(Mono cast: 8)	(Mono cast: 4.8)

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8 point
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STANDARD FORM 306
July 1968, Bureau of the Budget
Circular No. A-11, Revised.
306-123

DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
SALARIES AND EXPENSES

DETAIL OF PERMANENT POSITIONS

14-0107-0-1-306	1989 actual	1990 estimate	1991 estimate
Executive level IV	1	1	1
Subtotal	1	1	1
ES-6	3	3	3
ES-5	3	3	3
ES-4	9	10	10
ES-2	2	2	2
ES-1	2	2	2
Subtotal	19	20	20
GS/GM-15	51	51	51
GS/GM-14	98	98	98
GS/GM-13	32	33	33
GS-12	23	25	29
GS-11	9	9	9
GS-9	11	11	11
GS-8	11	12	12
GS-7	25	27	27
GS-6	25	28	28
GS-5	20	23	23
GS-4	11	12	12
GS-3	1	1	1
Subtotal	317	330	334
Total permanent employment, end of year	337	351	355
(Mono cast: 16.3)	(Mono cast: 4.9)	(Mono cast: 4.9)	(Mono cast: 4)

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ADVISORY AND ASSISTANCE SERVICES

UNITED STATES DEPARTMENT OF THE INTERIOR

OFFICE OF THE SOLICITOR
Salaries and Expenses

(In Thousands of Dollars)

Account Title and Symbol		1989	1990	1991
Salaries and Expenses: No. 14-0107-0-1-306				
I. Contractual Services				
Individual Experts & Consultants	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
Studies Analyses & Evaluations	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
Management Professional Support Services	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
Engineering & Technical Services	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
Subtotal	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
II. Personnel Appointments	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
III. Advisory Committees	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0
Totals	B.A.	0	0	0
	Oblig.	0	0	0
	Outlays	0	0	0

Prepared: January 23, 1990
P. Taborn
343-6538

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUDGET JUSTIFICATIONS, F.Y. 1991

March 3, 1849

OFFICE OF THE INSPECTOR GENERAL

NOTICE: These budget justifications are prepared for the Interior and Related Agencies Appropriations Subcommittees. Approval for release of the justifications prior to their printing in the public record of the Subcommittee hearings may be obtained through the Office of Budget of the Department of the Interior.

DEPARTMENT OF THE INTERIOR

OFFICE OF INSPECTOR GENERAL

FISCAL YEAR 1991 BUDGET JUSTIFICATIONS

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DEPARTMENT OF THE INTERIOR

OFFICE OF THE SOLICITOR

Summary of Requirements by Object Class

(dollar amounts in thousands)

Appropriation: Salaries and Expenses

		1991 Base		1991 Estimate		Inc.(+) or Dec.(-)	
		FTE	Amount	FTE	Amount	FTE	Amount
Object Class							
11.	Personnel compensation:						
11.1	Permanent positions........................	341	16,403	341	16,403	--	--
11.3	Positions other than permanent..............	18	647	18	647	--	--
11.5	Other personnel compensation................	--	143	--	143	--	--
	Total personnel compensation................	359	17,193	359	17,193	--	--
Other objects							
12.1	Personnel benefits: civilian...............		3,097		3,097		--
13.0	Benefits for former personnel...............		14		14		--
21.0	Travel and transportation of persons........		523		523		--
22.0	Transportation of things....................		30		30		--
23.1	Rental payments to GSA......................		1,276		1,276		--
23.3	Communications, Utilities and............... Miscellaneous Charges		686		686		--
24.0	Printing and reproduction...................		175		175		--
25.0	Other services..............................		2,944		2,944		--
26.0	Supplies and materials......................		214		214		--
31.0	Equipment...................................		333		333		
	Total requirements..........................	359	26,485	359	26,485	--	--

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

GENERAL STATEMENT

Department Profile

The Department has about 73,000 full-time equivalent employees, spends about $6 billion a year, collects revenues of about $5.5 billion a year and is geographically dispersed to over 2,000 locations. Interior programs are responsible for leasing the rights to oil, gas, and other minerals on Federal lands and the Outer Continental Shelf; managing the conservation and development of 340 million acres of public land; regulating coal mining operations at 10,000 mines; providing irrigation water service, municipal and industrial water supplies, hydroelectric power and flood control to 17 western states; running the 355 sites of the national park system; managing 454 national wildlife refuges and 78 fish hatcheries; servicing over 500 Indian tribes and Alaskan Native Villages; and promoting political, economic, and social development in the U.S. Territories.

Office of Inspector General Mission

The Inspector General Act of 1978, P.L. 95-452, created the Office of Inspector General (OIG) within the Department of the Interior.

The purpose of this law includes (1) conducting and supervising audits and investigations relating to programs and operations of the Department of the Interior; (2) providing leadership and coordination and recommending policies for activities designed for (a) promoting economy, efficiency, and effectiveness in the administration of, and (b) preventing and detecting fraud and abuse in such programs and operations; and (3) providing a means for keeping the head of the establishment and the Congress fully and currently informed about problems and deficiencies relating to the administration of such programs and operations and the necessity for and progress of corrective action.

Comparison of 1991 estimate with the 1990 enacted level

(Dollar Amounts in Thousands)

Approp. Requested	FY 1990 Enacted to Date	FY 1990 Adjusted Appn.	FY 1991 Estimate	Inc.(+) or Dec (-) from Enacted	Perm. Employ. 12/31/89
Audit ($)	13,677	13,496	14,342	+665	
(FTE)	(209)	(209)	(221)	(+12)	(203)
Investigations($)	3,161	3,120	3,508	+347	
(FTE)	(57)	(57)	(63)	(+6)	(52)
Administration($)	3,899	3,848	3,872	-27	
(FTE)	(30)	(30)	(32)	(+2)	(29)
OIG ($)	20,737	20,464	21,722	+985	
(FTE)	(296)	(296)	(316)	(+20)	(284)

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Highlights of the 1991 Request

The proposed 1991 budget request reflects a net increase of $985,000 above the amount enacted for 1990. The major changes between the 1991 base budget and the 1991 request are as follows:

	Total FY 1991 Increase Requested	
	(Dollar Amounts in Thousands)	
	(FTE)	($)
An increase is requested for Audits for additional contract audits.	+5	+277
An increase is requested for Audits to augment the internal control program caused by recent Congressional and OMB concern relating to program fraud and abuse.	+3	+166
An increase is requested for Audits for work mandated by the Single Audit Act.	+2	+111
An increase is requested for Audits to audit the administrative expenses for the Central Utah Project as required by the FY 1989 Energy & Water Development Appropriation Act.	+1	+55
An increase is requested for Investigations for five investigators to augment the Energy Resources Fraud Investigative Program.	+5	+278
An increase is requested for Investigations for work associated with Indian reservations and the Central Arizona Project.	+1	+56
An increase is requested for Administration for two computer specialists.	+2	+92
An increase is requested for Administration for administrative support costs for the above programmed increases.	--	+62
Total	+19	+$1,097

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Authorizing Legislation

The Inspector General Act of 1978, P.L. 95-452, as amended.

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

APPROPRIATION LANGUAGE

For necessary expenses of the Office of Inspector General, [20,737,000] $21,722,000. (Department of the Interior and Related Agencies Appropriations Act, 1990)

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

APPROPRIATION LANGUAGE CITATION

Appropriation: Office of Inspector General

For necessary expenses for the Office of Inspector General, 5 U.S.C. Appendix.

5 U.S.C. Appendix provides for the establishment of the Office of Inspector General as an independent and objective unit within the Department of the Interior to conduct and supervise audits and investigations related to Departmental programs and operations.

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

JUSTIFICATION OF BASE ADJUSTMENTS
(Dollar Amounts in Thousands)

	FTE	Amount
Adjustment for 1990 Effect of P.L. 99-177........	--	+273

The Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177), as amended, required a reduction in non-exempt programs in FY 1990. Since the reduction applies to FY 1990 only, this adjustment is made to allow a more comparable basis for showing program changes from FY 1990 to FY 1991.

	FTE	Amount
Adjustment for Administrative Efficiency.........	--	-109

The Department is proposing to decrease spending for consultants, travel, overtime, supplies and equipment by about 5 percent to improve administrative efficiency and place greater priority on 1990 program initiatives. Specific reductions are proposed in the following areas:

Travel..........................	-$93,000
Supplies.......................	-4,000
Equipment......................	-12,000

	FTE	Amount
Adjustment for Staffing Efficiency..............	-1	-64

Savings are proposed from a planned reduction in the average grade achieved by filling vacant positions at an average of one grade lower than previously filled and from taking into account an expected additional lapse of 30 days before filling positions that become vacant in 1991. Specific reductions follow:

Average Grade..................	-$28,000
Lapse..........................	-36,000

This is the estimate of the number of FTEs that will be saved by refraining from filling expected vacancies for one month longer than normal. The number of vacancies was determined by using an average attrition rate of 5% applied to the 1991 FTE usage.

	FTE	Amount
Additional cost in 1991 of the 1991 pay raise.....	--	+174

The adjustment is for the additional amount needed in 1991 to cover 40 percent of the additional three quarter's cost of the estimated 3.5 percent pay raise effective in January 1991. The total amount is for general schedule pay. The 1991 cost of the remaining 60 percent will be absorbed in FY 1991.

Workers Compensation Payment.................... -- +19

The adjustment is for increased costs for compensation to injured employees to be paid to the Department of Labor, Federal Employees Compensation Fund, pursuant to 5 U.S.C. 8147(b) as amended by Public Law 96-499.

Rental payments to GSA.......................... -- +42

The adjustment is for increased costs payable to GSA resulting from higher rates for office and non-office space.

CSRS/FERS Retirement Costs...................... -- +30

The adjustment is for the increase in estimated retirement costs resulting from the continuing growth in the relative proportion of FERS employees in the Office of Inspector General work force.

Departmental Working Capital Fund............... -- -32

The adjustment is for decreased costs assigned to the Office of Inspector General for administrative services provided on a Department-wide basis. In FY 1991, costs for the Washington Interagency Telecommunications System (WITS), the GSA-provided computerized telephone system for the Interior Complex and the Department's in-house data interface/transport system, will decrease. Major acquisition and start-up costs for WITS will occur in FY 1990, with reduced costs in 1991 related primarily to maintenance. This reduction will be partially offset by adjusments for safety management and printing.

One More Paid Day in FY 1991.................... -- +53

The increase in personnel compensation results from there being one more paid day in FY 1991 than in FY 1990.

One-time purchase of Minicomputer............... -- -225

The adjustment is for the one-time purchase of a minicomputer in FY 1990.

Audits - Full-Time Equivalent	+2	--
The adjustment is for two full-time equivalent positions to perform audits previously funded through contract audit funds.		
TOTAL	+1	+161

Justification of Program and Performance

Activity: Audits

(Dollar Amounts in Thousands)

	1990 Enacted To Date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) From Base
($)	13,677	13,496	13,733	14,342	+609
(FTE-T)	209	209	210	221	+11

Impact of Public Law 99-177

	1990 Enacted To Date	PL 99-177 B.A. Cancellation	1990 Adjusted Approp.
Audits	13,677	-181	13,496

As a result of the $181,000 P.L. 99-177 reduction, travel and training costs will be reduced. The travel reduction will curtail some audits which require travel to field locations including Indian and territorial activities.

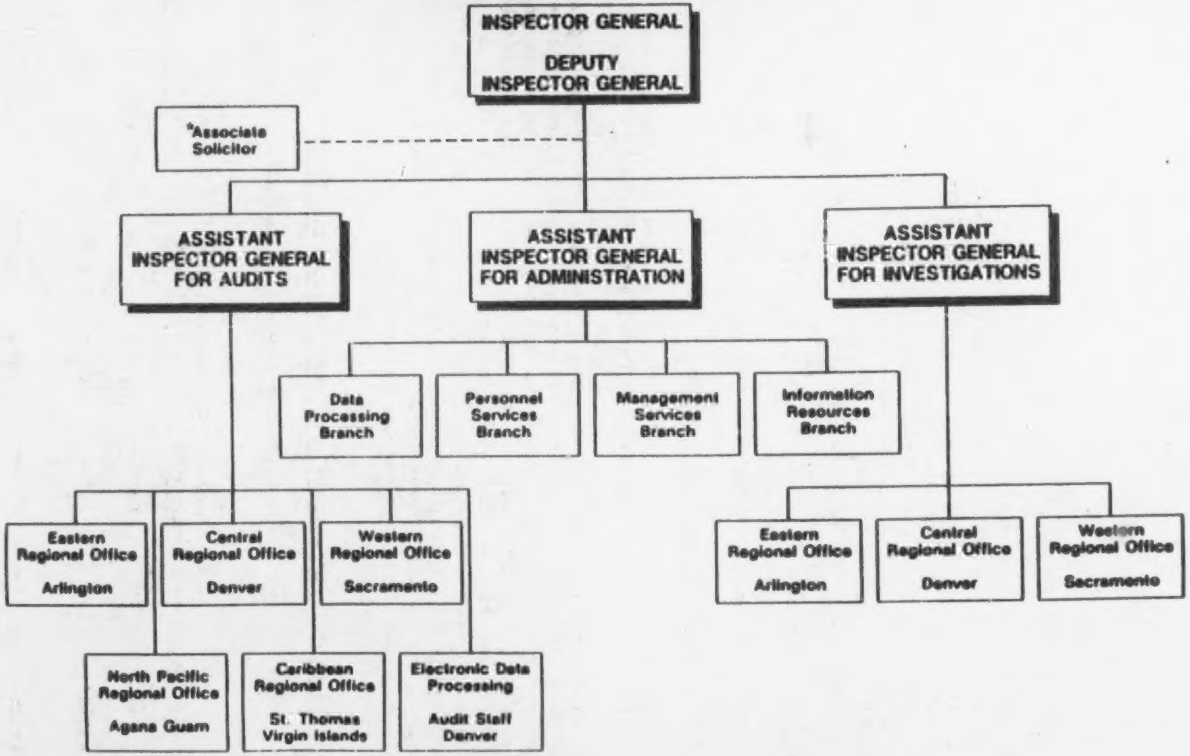
Authorization

The OIG is authorized by Public Law 95-452, the Inspector General Act of 1978, to conduct and supervise audits of the Department's programs and operations. Additionally, on October 19, 1982, the functions, powers, and duties of the U.S. Comptrollers for the Virgin Islands, American Samoa, Guam, Palau, and Northern Mariana Islands were transferred to the OIG in accordance with Public Law 97-357. The OIG also has audit responsibilities in the Federated States of Micronesia and the Marshall Islands in accordance with Public Law 99-239, Compact of Free Association Act of 1985.

Objectives

The Assistant Inspector General for Audits (AIGA) manages, supervises, coordinates, and conducts audits relating to Departmental programs and operations; provides audit services to all management levels within the Department; determines and oversees the use of all contracted audit activities of the Department; and develops and implements policies, procedures, and guidelines for audit activities. In addition, the AIGA is responsible for maintaining a satisfactory level of independent audit oversight of the governments of Guam, Marshall Islands, Federated States of Micronesia, Palau, Northern Marians Islands, Virgin Islands, and American Samoa.

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL


INSPECTOR GENERAL
DEPUTY INSPECTOR GENERAL
*Associate Solicitor
ASSISTANT INSPECTOR GENERAL FOR AUDITS
ASSISTANT INSPECTOR GENERAL FOR ADMINISTRATION
ASSISTANT INSPECTOR GENERAL FOR INVESTIGATIONS
Data Processing Branch
Personnel Services Branch
Management Services Branch
Information Resources Branch
Eastern Regional Office Arlington
Central Regional Office Denver
Western Regional Office Sacramento
North Pacific Regional Office Agana Guam
Caribbean Regional Office St. Thomas Virgin Islands
Electronic Data Processing Audit Staff Denver
Eastern Regional Office Arlington
Central Regional Office Denver
Western Regional Office Sacramento

* Provides legal services to OIG pursuant to a Memorandum of Understanding between the Inspector General and the Solicitor

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL
SUMMARY OF REQUIREMENTS
(Dollar Amounts in Thousands)

Appropriation: Office of Inspector General

	FTE/T	Amount	FTE/T	Amount
Appropriation enacted 1990..................................			296	20,737
Reduction pursuant to P.L. 99-177..........................				-273
Adjusted Appropriation, 1990................................			296	20,464
Adjustments to Base:				
Adjustment for 1990 impact of P.L. 99-177............		+273		
Adjustment for Administrative Efficiency.............		-109		
Adjustment for Staffing Efficiency...................	-1	-64		
Additional cost in 1991 of the 1991 pay raise........		+174		
Workers Compensation Payments........................		+19		
Rental payments to GSA...............................		+42		
CSRS/FERS..		+30		
Departmental Working Capital Fund....................		-32		
One More Paid Day in FY 1991.........................		+53		
One-time Purchase of Minicomputer....................		-225		
Audits - Full-Time Equivalent........................	+2	---		
			+1	+161
1991 Base Budget..	——	——	297	20,625
Program Changes				
Audits - Contract Audits.............................	+5	+277		
Audits - Internal Audits.............................	+3	+166		
Audits - Single Audits...............................	+2	+111		
Audits - Central Utah Project........................	+1	+ 55		
Investigations - Additional Investigators............	+6	+334		
Administration - Computer Specialists................	+2	+92		
Administration - Administrative Support..............	—	+62		
			+19	+1,097
Total Requirements (1991 Estimate).........................	——	——	316	21,722

Comparison by Activity/Subactivity

	1989 Actual		1990 Enacted to Date		PL 99-177 Reduction	1990 Adjusted Approp.	1991 Base		1991 Estimate		Inc(+)/Dec(-) from 1990 Appropriation		Inc(+)/Dec(-) from 1990 Adjusted	Inc(+)/Dec(-) from 1991 Base	
	FTE-T	Amount	FTE-T	Amount	Amount	Amount	FTE-T	Amount	FTE-T	Amount	FTE-T	Amount	Approp.	FTE-T	Amount
Audits.................	211	12,498	209	13,677	-181	13,496	210	13,733	221	14,342	+12	+665	+846	+11	+609
Investigations.........	52	2,891	57	3,161	-41	3,120	57	3,174	63	3,508	+6	+347	+388	+6	+334
Administration.........	29	3,360	30	3,899	-51	3,848	30	3,718	32	3,872	+2	-27	+24	+2	+154
Total Requirements.....	292	18,749	296	20,737	-273	20,464	297	20,625	316	21,722	+20	+985	+1,258	+19	+1,097
Reimbursable Programs..	1	97	1	100	——	100	1	100	1	100	——	——	——	——	——
Total Programs.........	293	18,846	297	20,837	-273	20,564	298	20,725	317	21,822	+20	+985	+1,258	+19	+1,097

The AIGA allocates its resources to those activities considered the most critical based on dollar amount involved; program needs and characteristics; Congressional, Departmental, and public concerns; and prior audit coverage and results. This allocation of resources will:

- o Promote economy, efficiency, and effectiveness in the administration of the programs and operations of the Department.
- o Prevent and detect fraud and abuse.
- o Increase the amount of audit recoveries.
- o Ensure timely compliance with OIG recommendations.

Base Program

During fiscal year 1989, OIG issued 1299 audit reports and negotiated 285 indirect cost rates; and identified $786 million in potential audit recoveries, cost avoidance, and cost efficiencies. Some of the more significant audits are summarized below:

- An audit of the repayment of investment in Indian irrigation projects found that the Government will incur an additional $72 million in interest costs unless the Bureau of Indian Affairs takes actions to ensure collection of reimbursable, interest-free construction costs on five Indian projects from non-Indian landowners. Reasons for the lack of collections included the Bureau not determining amounts to be collected, not updating amounts to be collected, not updating repayment rates based on current ability-to-pay studies, and not negotiating repayment contracts. The Bureau also does not have adequate controls over the amount of construction costs to be reimbursed by individual project because of the lack of periodic reconciliations and monitoring by Bureau personnel. OIG recommended that the Bureau determine the reimbursable costs due and establish annual assessment charges sufficient to recover those costs within 40 years for each of its projects and develop repayment rates based on the landowners' ability to pay whenever it is demonstrated that full assessment cannot be paid. The Bureau should also determine the reimbursable status of each project and reconcile the general ledger balances with amounts maintained by individual project. The Bureau agreed to implement the recommendations.
- An audit of the Bureau of Indian Affairs trust fund management identified over $1.5 million for return to the U.S. Treasury. These overdisbursements resulted from improper accounting entries and inadequate internal controls. In addition to these overdisbursements, improper accounting entries resulted in reduction of the permanent investment accounts below authorized levels, nondistribution of funds to individual Indian money accounts, and negative account balances. OIG recommended adjustments to correct account balances and the collection and return of the overdisbursements to the Treasury. The Bureau has generally agreed with the recommendations and has initiated corrective actions.

- An audit of user charges in the Department of the Interior concluded that four bureaus—National Park Service, U.S. Fish and Wildlife Service, Minerals Management Service, and Bureau of Land Management—had not taken full advantage of user fees, as authorized by the Independent Offices Appropriations Act of 1952, to recover the costs for providing services and special benefits to identifiable recipients. These costs totaled about $24 million. In some cases, legislative impediments prevented the establishment of user charges. OIG recommended various actions to the bureaus for establishing and collecting user fees. The U.S. Fish and Wildlife Service, Minerals Management Service, Bureau of Land Management, and National Park Service have agreed to implement most of the recommendations.

- An audit of the value engineering program in the Department of the Interior concluded that the Department could save $58 million annually by establishing an effective value engineering program. Specifically, the Department has not issued adequate value engineering guidance and has not performed sufficient oversight to evaluate the effectiveness of each bureau's value engineering efforts. As a result, only the Bureau of Reclamation (BOR) has established a value engineering program within the Department. Although BOR has made progress, ample resources and attention have not been devoted to promoting contractor submitted value engineering proposals or performing and implementing value engineering studies. Consequently, few value engineering studies have been performed, and only $32 million of the $329 million in potential value engineering savings identified over the past 5 years have been implemented. Based on BOR's achieved savings, the OIG estimated that the Department could save $58 million annually by establishing an effective value engineering program. Both BOR and the Assistant Secretary for Policy, Budget and Administration have agreed to implement appropriate corrective actions to improve the Department's value engineering program.

- An audit of the Virgin Islands personnel merit system study concluded that the Government of the Virgin Islands did not follow procurement regulations or apply sound business practices in arranging for the study and subsequently failed to exert proper management and accounting controls over the conduct of the study. As a result, the Government spent at least $33,621 on activities that could have been performed by Virgin Islands staff and incurred $228,662 for activities which were of questionable eligibility for reimbursement. In addition, it was estimated that project costs could total $312,470, or $52,470 more than the $260,000 appropriation. The Virgin Islands Government also initiated the work without completing intergovernmental personnel agreements with District Government officials.

- A summary report on the Bureau of Reclamation's timely recovery of irrigation investment costs found that the present method of recovering irrigation debt substantially limits revenues paid to the United States Treasury. Under the present repayment method, the majority of the irrigation costs debt, referred to as irrigation assistance, is scheduled to be repaid by power users interest-free after first repaying the interest-bearing investment costs. A sound business approach requiring amortized repayment of the interest-free irrigation assistance concurrent with repayment of the interest-bearing investment would allow the Government to accelerate investment recovery and collect $2.1 billion of additional revenues over the respective project repayment periods. The present value of this additional recovery approximates $415 million. The Central Arizona Project, Colorado River Storage Project, Pick-Sloan Missouri Basin Program and the projects within the Pacific Northwest Region were included in the review. The December 15, 1989, response of the Assistant Secretary for Water and Science to the final audit report was not sufficient to resolve the recommendation contained in the report. We are planning to refer the report to the Assistant Secretary for Policy, Budget and Administration for resolution.

- An audit of the Government of American Samoa found that Samoa consistently underestimated the amount of local revenues collected and available for governmental operations in annual budget submissions to the U.S. Congress. As a result, requests for financial assistance were overstated by $36 million during the fiscal years 1984 through 1988. Although apprised of these additional Revenues, the Office of Territorial and International Affairs neither reduced the Federal grants nor subsequently informed Congress of the specific differences between estimated and actual revenues. In addition, Samoa received advances of up to $1 million for capital improvement projects without using or expending portions of these advances for several years. Territorial Affairs concurred with 3 of the 4 recommendations and has taken steps toward implementation. Although Territorial Affairs did not concur with the remaining recommendations to decrease operation grant amounts, it is developing policy regarding federal operating subsidies.

Work Load

The audit work load of the OIG is divided into two broad categories: internal and external. The internal audit effort, generally performed by OIG staff, involves program reviews and evaluations; audits of functions and organizational entities; and audits of third parties, such as oil and gas lessees, Indian tribes, and territorial governments. External work includes reviewing costs proposed and claimed by contractors and grantees and providing technical assistance and oversight for audits performed in accordance with the Single Audit Act. The in-house contract and grant work is supplemented by contracted audit services from other Federal agencies.

For fiscal year 1991, audits covering activities in the following areas are proposed:

- o Management of land and resources
- o Oversight of the Royalty Management Program
- o Operation of parks and refuges
- o Operation of Indian programs
- o Operation of territorial governments

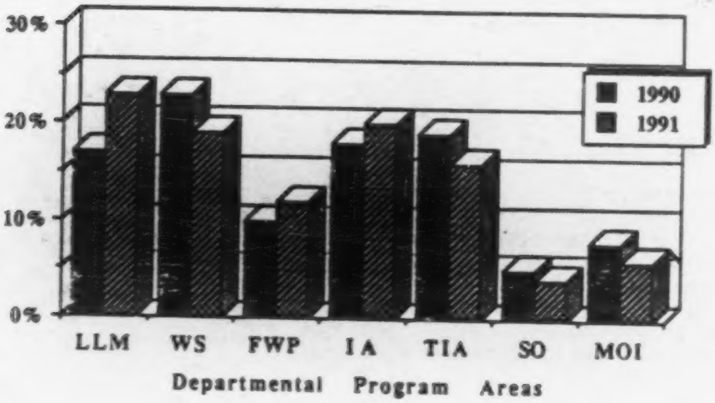
The following table is an estimate of the number of audit reports to be accomplished for fiscal years 1990 and 1991 by type of audit/functional area:

	1990 Estimate	1991 Estimate
Indirect cost negotiations	350	350
Audits of programs, functions, and organizational entities	125	125
Contract and grant audits conducted by OIG staff	60	70
Purchased audits	150	150
Single audits of grantees	1,300	1,400
Subtotal	1,985	2,095

The percentages of audit effort that will be allocated among the major Departmental program areas for fiscal years 1990 and 1991 are estimated as follows:

	1990 Percentage	1991 Percentage
Land and Minerals Management	17	23
Water and Science	23	19
Fish and Wildlife and Parks	10	12
Indian Affairs	18	20
Territorial Affairs	19	16
Secretarial Offices	5	4
Multiple Office Initiatives	8	6
Total	100	100

PERCENTAGE OF AUDIT EFFORT
1990 & 1991



OIG is programming 212 direct staff years of audit effort for 1991: 197 by OIG and 15 by purchases. About 68 percent of the total effort will be directed to internal audits, and 32 percent to contract and grant audits.

Fiscal Year 1991 Suggested Audits

The major program areas identified for audit coverage listed in the following presentations are estimates of the audit priorities for fiscal year 1991. These priorities may change on the basis of Presidential, Congressional, Office of Management and Budget (OMB), and Departmental concerns and OIG reevaluation of audit priorities over the next 2 years.

	STAFF YEARS
LAND AND MINERALS MANAGEMENT	48

Bureau of Land Management
Selected Contracts and Grants
Selected Aspects of the Royalty Management System
Minerals Programs
Renewable Resource Management
Land Use Planning

Minerals Management Service
Selected Contracts and Grants
Oil and Gas Royalty Payments
Selected Aspects of the Royalty Management System

Office of Surface Mining
Selected Contracts and Grants
Procurement
Selected Aspects of the Regulatory and Abandoned Mined Lands Program

	STAFF YEARS
WATER AND SCIENCE	41

Bureau of Reclamation
Selected Contracts and Grants
Selected Aspects of Reclamation Projects and Bureauwide Reviews
Water Use Conversions
Non-Indian Distribution System Cost Sharing on Central Arizona Project
Aspects of the Reclamation Reform Act or Other Acts

Bureau of Mines
Selected Contracts and Grants
Privitization and Sale of Helium Facilities
Allotment and Research Grants to Mineral Institutes

Geological Survey
Selected Contracts and Grants
User Utilization of Automated Data Processing System and Equipment
Geologic and Mineral Resource Surveys and Investigations

	STAFF YEARS
FISH AND WILDLIFE AND PARKS	26

Fish and Wildlife Service
Selected Contracts and Grants
Fish and Wildlife Enhancement
Management of Government Quarters
Small Purchases
Automatic Data Processing Management

National Park Service
Selected Contracts and Grants
Management of Park Areas
Premium Pay
Small Purchases
Automatic Data Processing Management

	STAFF YEARS
INDIAN AFFAIRS	42

Bureau of Indian Affairs
Selected Contracts and Grants
Management and Administration Functions
Tribal Services
Trust and Economic Development
BIA Program Operated by Selected Tribes and Contract Schools
Oversight of Single Audits - Indian Tribes

	STAFF YEARS
TERRITORIAL AND INTERNATIONAL AFFAIRS	35

American Samoa, Guam, Mariana Islands, Virgin Islands, and the Compact Governments (Federated States of Micronesia, the Marshall Islands, and Palau)
Selected Contracts and Grants
Single Audit Implementation
Local Government Operations
Program Reviews of Federal Grants
Compact Funding

	STAFF YEARS
OFFICE OF THE SECRETARY	8

Selected Contracts and Grants
Selected Administrative Activities
Consulting Services Information

	STAFF YEARS
MULTI-OFFICE AUDITS	(16)*

Compliance with OMB Circular A-123
President's Council on Integrity and Efficiency
Accounting System Conversion Reviews
ADP Security
Systems Development and Implementation
Review of Interior Procurement Data System
Special Assignments
Oversight of Single Audits - State Agencies
Superfund Activities
Followup Reviews

	STAFF YEARS
MULTI-OFFICE INITIATIVES	12

Multi-Office Initiatives
Maintenance of Audit Inventory and Coordination With the Department on Management Improvement Initiatives
Development of FY 1991 Audit Plan and FY 1992 Budget
Analysis and Quality Control of Audits Performed by Non-DOI Auditors
Audit Assistance on Investigative Cases
Semiannual Report Preparation
Quality Assurance Reviews
Audit Followup

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* These staff years are included under the individual bureaus.

Changes From FY 1991 Base

(Dollar Amounts in Thousands)

	1991 Base	1991 Estimate	Difference
$	13,733	14,342	+609
(FTE-T)	210	221	+11

Contract Audits - Five Full-Time Equivalents (FTE's) + $277,000

Contract audits are a significant and highly cost effective part of the work load of the Office of Inspector General. During fiscal year 1989, we issued 128 audit reports on Department of the Interior contracts valued at $299 million. These reports resulted in $80 million in cost exceptions, or an average 27 percent of the dollars audited. However, the number of contract audits and related audit support staff has not kept pace with the continually expanding work load over the past few years because of other audit priorities and requirements.

The number of contract claim audit reports issued for the Bureau of Reclamation, which is involved in the largest dollar volume of procurement actions, has increased over the last 3 years. During fiscal year 1989, the Inspector General issued 21 reports covering $83 million in proposed costs. This represented a 64 percent increase in the dollars audited over fiscal year 1986. We anticipate that demands for future audits will continue to increase. While claim audits generally have a high dollar impact, they are more complex than other types of contract audits and require greater audit resources.

As a result of the increase in Bureau of Reclamation's contract audit services, other contract audit requests have gone unfulfilled. In the last 2 years, we have had to deny 33 formal audit requests from Interior procurement officials because of staffing shortages. Over the last several years, our internal audit and single audit demands have greatly increased, both as a result of legislation and as a result of increasing demand for our services by Interior bureaus and offices. For example, our office is required to conduct biennial royalty compliance reviews of the Minerals Management Service and to provide audit coverage for certain Superfund projects for the Environmental Protection Agency.

We estimate that it will require 5 additional FTE's to meet anticipated requests for contract audits in fiscal year 1991. These additional FTE's can be justified based on the results of our experience on the effectiveness of contract audits, which indicate $50 in audit cost exceptions for each $1 spent on the audit. Without these additional FTE's, we will not be able to fulfill the bureaus' increasing demand for more contract audit support.

Internal Audit - Three Full-Time Equivalents (FTE's) + $166,000

The three FTE's will be used to provide additional coverage of the Department's implementation of the internal control review process as required by the Federal Managers' Financial Integrity Act of 1982. The additional coverage is being provided because of the IG's desire to comply with the Director of the Office of Management and Budget and the Departmental initiative to reassess internal controls in Departmental programs and operations. We review the internal control review process in one or more Bureaus and at least one major accounting system on an annual basis to determine compliance with the requirements of the Act. This review focuses on the evaluation and testing of the internal controls to determine whether the controls are functioning and effective, and whether Departmental accounting systems comply with all Federal requirements. The additional FTE's will be used to expand our annual review to assure that internal controls in the Departments' programs are sufficient to prevent waste and abuse.

Single Audit - Two Full-Time Equivalents (FTE's) + $111,000

Justification for two additional FTE's to meet our increasing single audit workload for fiscal year 1991 follows:

- During the last 2 years, we have experienced a progressively increasing work load and backlog in processing single audit reports. These reports, referred to as collateral reports, are applicable to single audits of state and local governments that have received Federal funding from the Department of the Interior. Other Federal agencies are cognizant, but the Single Audit Act requires us to issue these reports within 60 days to the respective funding bureaus and to monitor resolution of findings. To handle this increased volume of reports, we have programmed staff from other audit functions to not only reduce the backlog, but to just keep abreast of the increasing quantity of collateral single audits received. For example, we have detailed two additional auditors to single audits, in order to keep pace with the quantity received during that same period, and have been able to reduce our backlog only slightly. Consequently, additional staffing is needed to meet the added processing requirements caused by the increased volume of collateral audit reports that current experience indicates is expected to continue to grow as more and more entities are having the required single audit performed.

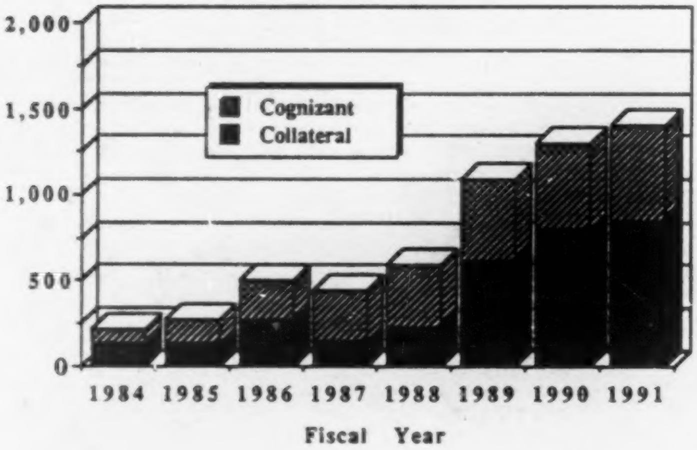
- The Inspector General Act Amendments of 1988 have changed the reporting requirements for cost exceptions identified in single audit. We must now analyze all cost exceptions and categorize them into two categories consisting of questioned and unsupported costs instead of listing them in one category as previously done. Since this impacts on audit reports prepared by independent non-Federal auditors, we cannot require them to modify their reporting format. Consequently, additional effort will be required to analyze their reports and convert the data so that it is compatible with the Inspector General Act and OMB reporting requirements.

- We assumed cognizance for 384 Alaskan Native organizations (195 Federally recognized and 189 nonprofit) on July 1, 1986. However, we have only received and overseen audits applicable to 24 of these Alaskan Native entities that will be having single audits made in accordance with the requirements of the Single Audit Act. We expect the number of single audits from these entities to increase significantly during the next few years. Accordingly, we need additional staff to meet our cognizant agency responsibility for this increasing quantity of single audits.

The increase in single audit activity since FY 1984 follows:

Fiscal Year	Collateral	Cognizant	Total
1984	139	81	220
1985	142	135	277
1986	278	227	505
1987	155	292	447
1988	231	363	594
1989	625	466	1,091
1990	800	500	1,300
1991	850	550	1,400

Single Audit Act Reports
FY 1984 - FY 1991



Audit of Administrative Expenses of the Central Utah Project - One Full-Time Equivalent (FTE) + $55,000

Section 205 of the Energy and Water Development Appropriations Act for 1989 requires the Office of Inspector General to perform an annual audit of administrative expenses incurred on the Central Utah Project by the Bureau of Reclamation.

Section 206 of the Continuing Appropriations Act for FY 1988 and Section 205 of the Appropriations Act for FY 1989 state "that none of the Bureau of Reclamation's appropriations shall be used to fund the audit." These sections prohibit OIG from obtaining reimbursements for costs from BOR for audits the OIG will perform during FY 1989 (BOR's FY 1988 operation) and for the FY 1990 (BOR's FY 1989 operation). The above prohibitions did not exist for the OIG for fiscal year 1988 administrative expenses, and we were able to obtain reimbursement from BOR to recover the cost of performing the mandatory audit for FY 1987.

Object Class Distribution

The object class distribution of the requested increase of $609,000 is as follows:

Object Class	Amount
Personnel Compensation	$435,000
Personnel Benefits	77,000
Travel	70,000
Other Services	5,000
Supplies	11,000
Equipment	11,000
Total	$609,000

Justification of Program and Performance

Activity: Investigations

(Dollar Amounts in Thousands)

	1990 Enacted To Date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) From Base
($)	3,161	3,120	3,174	3,508	+334
(FTE-T)	57	57	57	63	+6

Impact of Public Law 99-177

	1990 Enacted To Date	PL 99-177 B.A. Cancellation	1990 Adjusted Approp.
Investigations	3,161	-41	3,120

As a result of the $41,000 P.L. 99-177 reduction, travel and moving costs will be reduced. This reduction will cause the postponement of some investigations until FY 1991.

Authorization

The activities of the Office of Inspector General are authorized by Public Law 95-452, the Inspector General Act of 1978, and 5 U.S.C. (app.).

Objectives

The Assistant Inspector General for Investigations (AIGI) supervises and conducts investigations relating to Departmental programs and operations. The AIGI's goal is to provide adequate investigative coverage of the broad spectrum of Department of the Interior programs that are geographically scattered throughout the continental United States, Guam, Northern Mariana Islands, Virgin Islands and American Samoa. In a time of declining resources, the OIG is attempting to maintain adequate coverage through increased productivity and selectivity in the cases accepted for investigation. Our emphasis continues to be, in order of priority, criminal matters and civil fraud involving significant dollar losses. All but the most flagrant allegations of employee misconduct are sent back to the Department's bureaus for administrative management action in lieu of investigation; however, these referrals are subject to our oversight and review. If the Departmental inquiry reveals evidence of a crime, they are instructed to return the matter to OIG for reconsideration. When appropriate, the assistance of other law enforcement agencies, such as the FBI and Postal

Inspectors, is sought by the OIG. The OIG reciprocates by providing assistance to such law enforcement agencies as its resources permit.

Base Program

During fiscal year 1989, the OIG had over 340 cases under active investigation and processed over 320 hotline matters. During this period we obtained 77 criminal indictments/informations, 42 convictions/plea bargains, 47 administrative actions and recovered $7,800,336 in judgements and restitutions. Some of the more notable cases initiated or participated in were the following:

- The Outer Continental Shelf Lands Act (Act) (43 U.S.C. 1350 (c) (1)) and its accompanying regulations are designed to ensure the safety of those working in the vicinity of offshore drilling platforms and to protect the environment. Investigation revealed that a major oil company failed to perform required safety production tests, falsified other tests required by the Act, and illegally dumped pollutants into the ocean in violation of the Act. The oil company, a drilling company contracted to drill wells, and a drilling superintendent responsible for overseeing the actions of the company were indicted. The oil company pled guilty to two felony counts of the Act for failing to conduct safety tests and on January 17, 1989, was fined $750,000 in criminal penalties. The drilling superintendent pled guilty to two felony counts for failing to conduct safety tests. He was placed on probation for three years and fined $5,000.

- A major oil company paid a $5,000,000 civil settlement in connection with the unauthorized "flaring" of natural gas from offshore wells in the Gulf of Mexico. The investigation revealed that "flaring" took place over a nine-month period and that the total amount of natural gas which was wasted and on which royalties were not paid was 1,176,605 million cubic feet. The oil company submitted 20 false reports to the Minerals Management Service regarding production on the wells.

- In the past 2 1/2 years twelve contractors and suppliers on the multibillion dollar Central Arizona Project funded by the Bureau of Reclamation (BOR) have been convicted of criminal offenses as a result of OIG investigations.

- We are currently investigating the chairman of one of the largest Indian tribes in the country on allegations of fraud, bribery and tax evasion in connection with a multi-million dollar land deal.

Workload

The current workload completely absorbs our investigative capacity and will continue to do so for the foreseeable future. Our cases grow more complex and consuming in manpower and resources as the criminal element targeted by our investigations becomes more sophisticated in its methods of operations. Regardless, our investigative staff continues to average 60 indictments a year from a constant case inventory of approximately 350.

Changes From FY 1991 Base

(Dollar Amounts in Thousands)

	1990 Base	1991 Estimate	Difference
$	3,174	3,508	+334
(FTE-T)	57	63	+6

Six Additional Full-Time Equivalent (FTE's) (+ $334,000).

In FY 1988 and FY 1989, OIG was responsible for the first two successful investigations of criminal felony cases involving major oil companies cited for violations under the Outer Continental Shelf Lands Act. These two cases communicated a clear message to the oil industry that conservation of energy resources, safety, and environmental laws related to off-shore oil production would be aggressively enforced by this Department through OIG investigative efforts. Based on our assessment of potential criminal violations associated with off-shore oil, we are requesting five additional FTE's to support our expanded Energy Resources Fraud Investigative Program, two of which would augment our single-agent post of duty in Lafayette, Louisiana, and three FTE's to establish a Post of Duty in Anchorage, Alaska. The Alaskan Region is one of this Department's highest profile areas, and we have been unable, to date, to devote any meaningful manpower and resources to combat criminal activities victimizing DOI programs and operations in this region. Lacking such resources, we have referred over fifty allegations of Departmental fraud and corruption in Alaska to other law enforcement authorities for investigation, although we believe these agencies were unable to react to these complaints due to their own internal investigative priorities. Our permanent investigative presence is continually requested by the United States Attorney's Office for the District of Alaska, and we believe it is now appropriate to establish a post of duty there.

We are also requesting one FTE to augment a single-agent post of duty in Phoenix, Arizona where we would expand our investigative efforts in the area of fraud and corruption on the Navajo and surrounding Indian Reservations, and pursue the large number of potential criminal cases emanating from Government contracting in the Bureau of Reclamation's Central Arizona Project.

Object Class Distribution

The object class distribution of the requested increase of $334,000 is as follows:

Object Class	Amount
Personnel Compensation	$208,000
Personnel Benefits	68,000
Travel	43,000
Other Services	3,000
Supplies	6,000
Equipment	6,000
Total	$334,000

Justification of Program and Performance

Activity: Administration

(Dollar Amounts in Thousands)

	1990 Enacted To Date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) From Base
($)	3,899	3,848	3,718	3,872	+154
(FTE-T)	30	30	30	32	+2

Impact of Public Law 99-177

	1990 Enacted To Date	PL99-177 B.A. Cancellation	1990 Adjusted Approp.
Administration	3,899	-51	3,848

As a result of the $51,000 P.L. 99-177 reduction, the OIG will eliminate or reduce planned purchases of equipment and will reduce the current level of maintenance on existing equipment. The reductions to the purchase and maintenance of equipment may have an adverse impact on the productivity of the workforce.

Authorization

The activities of the Office of Inspector General are authorized by Public Law 95-452, the Inspector General Act of 1978 and 5 U.S.C. Appendix.

Objectives

The Office of the Assistant Inspector General for Administration plans, develops, manages and conducts programs and activities of the Office of Inspector General (OIG) relating to: program planning; budgeting; finance; personnel management; training; procurement; contracting; communications; information; office services; management improvement; directives management; automated data processing; and, other administrative operations. The Office coordinates the development, publication and issuance of policies concerning OIG activities.

Base Program

Provides management, administrative, and electronic data processing services for the Office of Inspector General.

Changes From FY 1991 Base

(Dollar Amounts in Thousands)

	FY 1991 Base	FY 1991 Estimate	Difference
$	3,718	3,872	+154
(FTE-T)	30	32	+2

Computer Specialists-Two Full-Time Equivalents (FTE's) + $92,000

Current and future demands on the Data Processing Branch include efforts in three major areas: continued development of a new Management Improvement System (MIS) which is essential for tracking and reporting on the activities of Audits, Investigations and Administration; replacement and maintenance of the current computer with a larger device; and, further development and maintenance of the telecommunications network which ties all OIG offices together.

Computer Specialists have been dedicated full time to development of the new MIS on our current computer. Overtime has been granted in order to ensure adherence to an intense development schedule and to meet other demands, such as maintenance of existing applications and special user requests. We anticipate that development demands will only increase as the move to centralize many peripheral data systems within the OIG is undertaken. In addition, the current Investigations MIS, though already resident on our current computer, has been targeted for update and integration into the new MIS.

At present, the OIG maintains an IBM 4331 minicomputer which holds several user application programs and the MIS that is currently being developed. This device is operating at capacity and cannot be expanded to meet our automated data processing needs. Our current minicomputer is being replaced with a larger minicomputer to which the MIS currently being developed and other user applications will be transferred. Our intense efforts in developing and maintaining the MIS as well as numerous other applications will not permit us to dedicate a computer specialist to systems maintenance. An additional position is needed for maintaining our automated data processing system.

Our recent efforts to upgrade the equipment throughout the telecommunications network has severely taxed the Data Processing Staff. Besides installing personal computers for use by Headquarters' and regional personnel, we have begun to install communications controllers and software at each of the regional offices. Full-time dedication of Computer Specialists to this effort has compromised our ability to respond effectively to maintenance and training concerns which regularly arise in daily operations. The increased demand by users for timely, dependable access to the MIS, create a critical need for an additional Computer Specialist to assist in maintaining telecommunications.

Administration requests two FTE's which will augment the continuing efforts of current staff members in providing crucial data processing services to Administration, Audits, and Investigations.

Administrative Support for Additional FTE's + $62,000

The administrative support for the additional 19 FTE's will be $62,000 per year. This is divided between space ($48,000) and telecommunications ($14,000). These costs are budgeted in the Administrative activity.

Object Class Distribution

The object class distribution of the requested increase of $154,000 is as follows:

Object Class	Amount
Personnel Compensation	$73,000
Personnel Benefits	12,000
Travel	2,000
Space	48,000
Telecommunications	14,000
Other Services	1,000
Supplies	2,000
Equipment	2,000
Total	$154,000

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Program and Financing (in thousands of dollars)

Identification code 14-0104-0-1-306		FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
	Program by activities:			
00.0101	Audits.......................	12,393	13,496	14,342
00.0201	Investigations...............	2,828	3,120	3,508
00.0301	Administration...............	3,272	3,848	3,872
00.9101	Total direct program ...	18,493	20,464	21,722
01.0101	Reimbursable program	97	100	100
10.0001	Total obligations	18,590	20,564	21,822
	Financing:			
11.0001	Offsetting collections from: Federal Funds..............	-97	-100	-100
25.0001	Unobligated balance lapsing..	256	--	--
39.0001	Budget authority (Appropriation).........	18,749	20,464	21,722

	Budget authority:			
40.0001	Appropriation................	18,749	20,737	21,722
40.0090	Reduction pursuant to P.L. 99-177................	--	-273	--
43.0001	Appropriation (adjusted).....	18,749	20,464	21,722

	Relation of obligations to outlays:			
71.0001	Obligations incurred, net....	18,493	20,464	21,722
72.4001	Obligated balance, start of year....................	2,623	2,320	2,046
74.4001	Obligated balance, end of year....................	-2,320	-2,046	-2,172
77.0001	Adjustments in expired accounts...................	-693	--	--
90.0001	Outlays......................	18,103	20,738	21,596

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Object Classification (in thousands of dollars)

Identification code 14-0104-0-1-306		FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
	Personnel Compensation:			
111.101	Full-time permanent..........	11,052	11,557	12,689
111.301	Other than full-time permanent	153	160	160
111.501	Other personnel compensation.	240	251	251
111.901	Total personnel compensation.	11,445	11,968	13,100
112.101	Personnel benefits: Civilian.	2,318	2,876	3,030
113.001	Unemployment compensation payments	4	12	12
121.001	Travel and transportation of persons	1,865	1,775	1,890
122.001	Transportation of things	16	178	178
123.001	Standard level user charges .	558	587	677
123.002	Rental payments to others ...	4	4	4
123.003	Communications, utilities and miscellaneous charges......	219	234	248
124.001	Printing and reproduction....	117	134	134
125.001	Other services...............	1,569	2,071	2,048
126.001	Supplies and materials.......	92	100	119
131.001	Equipment....................	286	525	282
199.001	Subtotal, direct obligations.	18,493	20,464	21,722
299.001	Reimbursable obligations.....	97	100	100
999.901	Total obligations..........	18,590	20,564	21,822

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Personnel Summary

Identification code 14-0104-0-1-306	FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
Direct			
Total number of full-time permanent positions..........................	289	292	312
Total compensable workyears:			
Full-time equivalent employment.....	292	296	316
Full-time equivalent of overtime.... and holiday hours................	1	1	1
Reimbursable:			
Total compensable workyears Full-time equivalent employment...	1	1	1

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Justification of Program and Performance

Activity: Operation and Maintenance of Quarters

(Dollar Amounts in Thousands)

	1990 Enacted To Date	1990 Adjusted Approp.	1991 Base	1991 Estimate	Inc. (+) Dec. (-) From Base
($)	---	---	---	---	---
(FTE-T)	---	---	---	---	---

This activity was curtailed at the end of FY 1987. The quarters were disposed of by September 17, 1987. Balances will be transferred to the U.S. Treasury during 1990.

Authorization

In prior years this activity provided for the utilization of receipts from the rental of quarters for the operation and maintenance of those quarters as authorized by section 320 of Public Law 98-473.

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Program and Financing (in thousands of dollars)

Identification code 14-5052-0-2-306		FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
	Program by activities:			
	Financing:			
21.4001	Unobligated balance available, start of year......	-39	-51	--
24.4001	Unobligated balance available, end of year........	51	--	--
25.0001	Unobligated balance lapsing.	--	51	--
60.0001	Budget authority (appropriation) (permanent, indefinite special fund)	12	--	--
	Relation of obligations to outlay:			
71.0001	Obligations incurred net..	--	--	--
90.0001	Outlays..................	--	--	--

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL
DETAIL OF PERMANENT POSITIONS

	1989 Actual	1990 Estimate	1991 Estimate
Executive Level IV	1	1	1
Subtotal	1	1	1
ES-5	1	1	1
ES-3	2	2	2
ES-2	1	1	1
Subtotal	4	4	4
GS/GM-15	13	13	14
GS/GM-14	37	38	40
GS/GM-13	69	70	72
GS-12	64	65	72
GS-11	27	27	29
GS-10	--	--	--
GS-9	21	21	23
GS-8	2	2	2
GS-7	24	24	26
GS-6	11	11	12
GS-5	11	11	12
GS-4	4	4	4
GS-3	1	1	1
GS-2	--	--	--
GS-1	--	--	--
Subtotal	284	287	307
Ungraded	--	--	--
Total permanent employment at end of fiscal year	289	292	312

DEPARTMENT OF THE INTERIOR
OFFICE OF INSPECTOR GENERAL

Evaluation of Consulting Services Procedures

As required by Title 31, United States Code, Section 1114(b), the Office of Inspector General has completed its fiscal year 1989 evaluation of the U.S. Department of the Interior's progress in (1) establishing effective management controls and (2) improving the accuracy and completeness of the information provided to the Federal Procurement Data System on contracts for consulting services.

We determined that the Department had developed an adequate system of management controls for the acquisition of consulting services (Departmental Manual Part 365). However, the management controls were not fully effective because the Department's bureaus still have not fully complied with the prescribed system.

For the 15-month period reviewed, the Department's bureaus did not accurately classify some acquisitions as consultant awards. In addition, our audit of "Data Integrity of the Department of the Interior Procurement Data System" (Report No. 90-26, issued on December 26, 1989) disclosed that the Department did not provide accurate and complete procurement activity data to the Federal Procurement Data System. The Secretary's 1989 annual statement on internal controls included the Interior Procurement Data System as a "material weakness" and indicated that it does not provide current, complete and accurate data. Accordingly, we are unable to provide reasonable assurance that the consulting services data provided to the Federal Procurement Data System are accurate and complete.

James R. Richards

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Inspector General

United States
Department of
Agriculture

Forest Service

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Highlights of the 1991 Request

Preamble

The President's FY 1991 Budget for the Forest Service programs is a substantial overall increase over budget proposals of previous years. After correcting for non-recurring fire costs, the FY 1991 proposal is also a substantial increase over amounts appropriated in FY 1990. The FY 1991 proposal will improve stewardship of our National Forest System. It also represents a significant shift in the balance among commodity and noncommodity outputs as compared to previous budget proposals and appropriations.

The FY 1991 Budget includes a number of important environmental initiatives while generally maintaining other basic output and service levels. The Budget:

- Addresses fundamental environmental concerns through expansion of global climate research and cooperative efforts to reduce tropical deforestation.
- Proposes to test the implications of eliminating below-cost timber sales on 12 national forests (9 administrative units) and to offset or soften the impact on local economies by expansion of recreation activities.
- Proposes legislation to increase or extend recreation fees and to test the opportunity to offset timber revenues shared with the counties.
- Proposes an initiative to strengthen the Nation's natural resource heritage entitled "America the Beautiful." Two significant components involve the Forest Service:
  - An increase in the land acquisition budget will permit acquisitions of high priority lands in wilderness, wild and scenic rivers, wetlands, and important recreation lands.
  - A national tree planting program will be initiated to improve the quality of life of communities and rural areas, reduce demands for energy to heat and cool buildings, and address concerns about the buildup of atmospheric carbon dioxide.
- Substantially increases recreation, wildlife and fish, range conservation, and soil and water activities over the levels proposed in previous budgets and levels appropriated in FY 1990.
- Maintains timber sale levels consistent with the "below-cost timber sales test," and limits established by land management plans.

Forest Research The proposed research budget has been significantly reoriented toward the most critical natural resource issues facing the Nation and world today. Emphasis is placed on six priority research programs:

- Global climate change. $23 million is proposed, an increase of $6.088 million from the base. The Forest Service approach to global change emphasizes integrated forest ecosystem studies and the interaction of multiple stresses on ecosystems. The work is fully coordinated with the President's Committee on Earth Sciences and other agencies within the Department.

- Water quality: the cumulative effects of management. $4.771 million is proposed, an increase of $1.881 million from the base. This research seeks to determine what effect land use activites on our Nation's forests and rangelands have on the quality of surface and ground water.

- Threatened and endangered species. $5.734 million is proposed, an increase of $63 thousand from the base. The objective of this research is to provide the knowledge and techniques needed to protect threatened, endangered, and sensitive species, and help their populations to recover.

- Enhancing forest-based economics in rural America. $11.433 million is proposed, an increase of $4.461 million from the base. This research will help communities economically dependent on forest land to diversify their economies and help industries improve their competitiveness.

- Southern forest productivity. $10.790 million is proposed, an increase of $627 thousand from the base. The objective is to develop new ways of increasing timber production from southern forests without adverse impacts on the environmental quality and distinctiveness of southern forests for other uses.

- Catastrophic forest fires. $7.210 million is proposed, a decrease of $205 thousand from base. Catastrophic forest fires are becoming more common. This research seeks to understand the environmental changes that set the stage for catastrophic fires, and the beneficial and adverse effects of fire on forested ecosystems.

The overall two percent reduction in research funding, compared to the FY 1991 base, along with the reorientation to the six priority areas means that reductions will be made in other research areas. Work on less critical problems will be delayed. Mergers are proposed for 11 research work units and six research work units will be terminated. Five project locations will be closed (Boseman, MT; Berea, KY; University Park, PA; Amherst, MA; and Orono, ME.

State and Private Forestry

State and Private Forestry will coordinate and provide technical and financial assistance to implement the nationwide tree planting program proposed as part of the President's major new environmental initiative--"America the Beautiful." The tree planting component of this initiative will significantly expand Federal forestry activities. It will strengthen and expand partnerships and calls for massive volunteerism at the grass roots level.

The initiative includes $175 million for tree planting and forest improvement in the Nation's cities and towns and in rural areas. Virtually every State, community, and citizen in the Nation will have the opportunity to participate, with a goal of planting nearly a billion trees a year for the next several years. The initiative is discussed further in the America the Beautiful section.

The budget continues some on-going programs and proposes some program terminations:

- Overall funding for the State and Private Forestry appropriation is decreased about 41 percent from the FY 1991 base reflecting a shift in priorities.
- Implementation of the forest health strategic plan will continue including forest health monitoring and coordination to protect Federal lands from pest outbreaks on adjacent lands.
- Funds are included to continue basic forest management and utilization programs which provide the foundation for undertaking the Presidential tree initiative component of the "America the Beautiful" proposal.
- Funding is not included for cooperative pest suppression, the Appalachian Integrated Pest Management Project, or financial assistance to States for fire protection.
- The stewardship and rural development initiatives, begun in FY 1990, will not be continued in FY 1991.

National Forest System

Next year will be the centennial of the Forest Reserve Act which led to the National Forest System as we know it today. Management of the national forests has changed over the past 100 years as public demands have changed. In the earlier days, these lands were remote and lightly used. Now there is intense and increasing competition among various types of uses.

The FY 1991 National Forest System (NFS) request represents a substantial change from previous budget proposals. Funding is a significantly increased over the FY 1990 proposal and reflects a change in program composition. The shift in program composition includes a reduction in the proposed timber sales level and an increase in the recreation, fish and wildlife, and some other programs. Overall funding is increased by almost two percent over the FY 1991 base.

A key component of this program reorientation is a proposed test on 12 national forests (9 administrative units) to evaluate the implications of eliminating certain below-cost timber sales and to determine if the impacts on local economies can be offset by expansion of recreation activities. A total of $10 million in appropriated funds is included to support the expansion ($7.5 million in the NFS account and $2.5 million in the Construction account). This test will also propose legislation authorizing the Secretary to charge fees for recreation activities on the 12 test forests. The fees would be used to replace the lost timber revenues shared with the counties and to fund additional investment in expanded recreation activities.

The proposed budget:

- Recognizes the increasing importance of the recreation program on the national forests and expands the National Recreation Initiative begun in FY 1988. The request is an increase of $58.3 million over the FY 1990 budget request and $33.2 million over the FY 1990 appropriation after adjustment for sequestration.

- The wildlife and fish habitat management program is increased by $24.3 million over the FY 1990 budget request and $3.6 million over the FY 1990 appropriation after adjustment for sequestration. Emphasis continues on the Rise to the Future and Get Wild habitat improvement programs.

- The range program is increased by $12.0 million over the FY 1990 budget request and $5.4 million over the FY 1990 appropriation after adjustment for sequestration. The range program will emphasize improving range and riparian conditions and development of AMPs, as well as partnership programs with permittees and other interest groups.

- An increase of $26.7 million over the FY 1990 budget request and $10.9 million over the FY 1990 appropriation after adjustment for sequestration is proposed for soil, water, and air management.

- The timber sales program for FY 1991 maintains the highest level consistent with the below-cost timber sales test and the limits established by the forest plans. The timber sales program level increases from 10.356 billion board feet (BBF) in FY 1990 to 10.564 BBF in FY 1991. FY 1990 appropriation action specified an 11.129 BBF program after sequestration but road construction funds presently available will only support a sale level of 10.356 BBF. An 8.5 BBF sale level is sustainable in FY 1991 and beyond with this funding. Harvest is expected to be 11.0 BBF in FY 1991.

- The FY 1991 reforestation program of 484,000 acres is the largest number of acres ever planned. The program will utilise various sources of funds and will complement the President's tree planting initiative.

Firefighting

This appropriation, established by the Congress in P.L. 101-121, Interior and Related Agencies Appropriation Act of FY 1990, consolidates fire protection, which includes presuppression and fuels treatment, emergency fire suppression, and funds for emergency rehabilitation, into one appropriation. In prior years, these activities were included in the NFS appropriation.

The FY 1991 Firefighting request is about seven percent lower than the FY 1991 base. Protection is set at a level consistent with other budget priorities. The budget includes funds needed to carry out emergency suppression and rehabilitation on burned over lands based on our National Fire Management Analysis model.

Construction

The FY 1991 request is $4.4 million below the FY 1990 budget request. It includes $2.5 million for facilities related to the below-cost timber sales test described earlier.

The Budget represents the minimum level needed to carry out the timber sales, recreation, and other proposed activities in a manner that protects environmental values and provides for the safety of users.

The road construction and reconstruction program provides access to NFS lands only as needed to support management objectives in the forest plans and proposed in the Budget.

- The bulk of the program involves reconstruction of existing roads to bring them into a reasonable condition to support planned use.

- Emphasis is placed on providing safe, economic, and low impact roads in the national forests to achieve management objectives while constraining Federal expenditures.

- The road construction program will also benefit from the challenge cost-share program, with roads built under this initiative generally meeting recreation, wildlife or other non-timber related needs. Of the Forest Service total $18.8 million cost-share program, $1.5 million is for road construction.

Land Acquisition

Under current law the FY 1991 request of $63.486 million would provide for acquisition of approximately 85,000 acres and for the costs of land exchanges in which the land to be acqured would qualify for purchase with Land Acquisition funds.

Under legislation proposed for FY 1991, a new "America the Beautiful" appropriation would be established and the $63.486 million plus an additional $25.383 million would be transferred from the Land and Water Conservation Fund (L&WCF) to the new appropriation. The FY 1991 proposed legislation would provide for acquisition of approximately 92,000 acres under the L&WCF.

America The Beautiful

The President is proposing a major new environmental initiative, called America the Beautiful. America the Beautiful will provide an environmental legacy for furture generations, will enhance existing natural and recreational resources, and will address mounting concerns about the buildup of atmospheric carbon dioxide. It includes a major nationwide tree planting program and a substantial expansion in Federal land acquisition.

The $175 million tree planting program will enhance the beauty of America - the beauty of this Nation's cities, towns, and rural areas. It will enrich the lives of all Americans by improving the environment and enhancing the beauty of our Nation.

Sixty-five million dollars will be directed toward a community volunteer program that involves corporate and civic voluntary efforts. The goal is to plan 30 million trees annually in the Nation's nearly 40,000 citities, towns, and communities. Funds are also provided for leadership, coordination, and technical assistance to support a massive volunteer effort.

The rural portion of the program ($110 million) will provide funds to cost-share tree planting and forest improvement with private landowners and funds for strengthening the technical assistance and infrastructure needed to work with landowners and assure environmentally-adapted planting stock is available.

Planting trees will also help demonstrate America's commitment to address worldwide concerns about deforestation and global climate change, by providing a positive example of action in the United States.

The America the Beautiful initiative also provides for acquiring lands to enhance the recreation, wilderness, wildlife and fisheries opportunitites of the National Forest System. The initiative includes $88.869 million for land acquisition. Priorities were developed through a competitive process that emphasized wetlands, proximity to urban areas, recreation potential, protection of endangered species, and other values which make public acquisition desirable.

Civil Rights

The Budget fully supports the Forest Service Civil Rights Program objectives to ensure fairness in all Forest Service activities. This includes activities such as contracting, public access, grants, education, employment, public service, data collection, and employee rights.

Historically Black Colleges and Universities

The Historically Black Colleges and Universities (HBCU) Program will continue its increased emphasis on strengthening relationships with Tuskegee University, special projects at North Carolina University AT&T, the recently established research submunit at Alabama A&M University, the 1890 Summer Student Employment Program, the Black College and University Comprehensive Program, and other HBCU schools.

New activities are closely tied to the USDA 1890 Task Force's recommendations. The program will emphasize 17 action areas to foster closer working relationships between the Forest Service and the 1890 Land Grant Colleges and Universities. Activities include programs designed to increase awareness of career opportunities in the Forest Service, participation of the 1890 Land Gant Colleges and Universities in agency management activities, exchange of personnel, and the creation of partnerships in research facilities, staff information, and other areas supporting advanced forestry research. A $2.9 million program is planned in FY 1991 compared to $1.5 million in FY 1990.

International Forestry

The Forest Service has an expanding international program due to the unprecedented need to assist developing countries around the globe and to slow deforestation in the tropics. Well established research at the Institute of Tropical Forestry in Puerto Rico, the Institute of Pacific Islands Forestry in Hawaii, and work on tropical woods at the Forest Products Laboratory provide the U.S. with a unique and invaluable foundation for assisting countries in achieving their development aspirations and for combatting tropical deforestation.

The Forest Service will increase its contribution to the implementation of the global Tropical Forestry Action Plan (TFAP) in FY 1991. We cooperate on TFAP with other domestic agencies, such as the U.S. Agency for International Development (AID), and international agencies, such as the Food and Agricultural Organization (FAO) of the United Nations. Technical assistance will focus on preparing for and responding rapidly to natural disasters and on reducing threats to the forest and rangeland resource base of the rural poor.

Forest relationships to global warming, cumulative watershed effects, and the effects of nutrient cycling on long-term site productivity are the three initiatives that will be emphasized in our international exchanges in FY 1991. Working with USDAs Office of International Cooperation and Development, the Forest Service will increase scientific and technical contacts and joint research with more than 30 countries.

Operation and Maintenance of Recreation Facilities

The request includes $16.6 million for Oeration and Maintenance of Recreation Facilities. Of this amount, $9.1 million will be appropriated under current law for recreation operation and maintenance activities. Proposed legislation will be submitted to make $7.5 million available from new fees and expand the purpose to include recreation and trail rehabilitation and reconstruction projects.

Receipts

In FY 1991 receipts are estimated to be $1.6 billion (including revenues from Public Domain Lands deposited to Department of Interior accounts). This compares to $1.6 bilion estimated in FY 1990 and $1.7 billion colleced in FY 1989. Increasing the number of recreation fee sites would increase receipts by $10 million.

Legislation proposed in the below-cost timber sales test authorizing the Secretary to charge fees for recreation acitivities on the 12 test forests would yield additional revenues.

BASE CALCULATION

The 1991 base represents the cost of the 1990 program in 1991.

	1990 Estimate with DOA Reduction	1/ Program Changes	2/ Cost Changes	3/ Subtotal	4/ Base Adjustment	1991 Base
			(Dollars in Thousands)			
Forest Research	$ 145,175	0	6,789	151,964	0	151,964
State and Private Forestry	$ 104,248	-12,440	4,010	95,818	-308	95,510
National Forest System	$ 1,135,656	0	32,164	1,167,820	1,792	1,169,612
Firefighting	$ 555,004	-347,287	13,589	221,306	0	221,306
Construction	$ 221,900	0	9,910	231,810	-231,810	0
Land Acquisition	$ 63,499	0	2,622	66,121	-59,733	6,388
Acquisition of Lands for National Forests, Special Acts	$ 1,054	0	44	1,098	-44	1,054
Acquisition of Lands to Complete Land Exchanges	$ 1,065	0	45	1,110	-45	1,065
Gifts, Donations and Bequest for Forest and Rangeland Research	$ 30	0	1	31	-1	30
Range Betterment Fund	$ 4,643	0	205	4,848	-205	4,643
Youth Conservation Corps	$ (1,000)	0	0	(1,000)	0	(1,000)
Permanent Appropriations	$ 550,889	0	23,777	574,666	-20,594	554,072
Cooperative Work, Trust Funds	$ 316,117	0	13,969	330,086	0	330,086
Reforestation Trust Fund	$ 30,000	0	1,318	31,318	-1,318	30,000
Total, Forest Service	$ 3,129,284	-359,716	126,896	2,896,165	-312,429	2,583,734

1/ One-time projects, such as the Grant to Arbor Day, are not included in the base.

2/ Costs changes represent increased salary costs (5.0 percent pay raise) and general inflation (4.2 percent).

3/ Reflects the costs of inflating all Forest Service programs (other than one-time programs).

4/ Construction and land purchase funds are justified from a zero base. The increased costs for the Range Betterment Fund, Operation and Maintenance of Quarters, and the Reforestation Trust are shown in the corresponding National Forest System activities. Other programs, for which inflation is inappropriate, are adjusted back to the FY 1990 level.

Comparison between 1991 Base and 1991 Estimate

Appropriations		1991 Base	1991 Estimate	Inc. (+) or Dec. (-)
		(Dollars in Thousands)		
Forest Research	$	151,934	148,672	-3,262
State and Private Forestry	$	95,510	56,617	-38,893
National Forest System	$	1,190,612	1,211,543	+20,931
Firefighting	$	321,396	297,849	-23,547
Construction	$	0	222,906	+222,906
Land Acquistion	$	6,332	63,486	+57,154
Less: Current Estimate	$	0	-63,486	-63,486
Subtotal, Land Acquisition	$	6,332	0	-6,332
America the Beautiful Plus: Proposed Legislation	$ 1/	0	263,869	+263,869
Acquisition of Lands for National Forests, Special Acts	$	1,054	1,103	+49
Acquisition of Lands to Complete Land Exchanges	$	1,065	1,105	+40
Gifts, Donations and Bequest for Forest and Rangeland Research	$	30	30	+0
Range Betterment Fund	$	4,643	4,578	-65
Operation and Maintenance of Recreation Facilities	$ 2/	0	16,617	+16,617
Youth Conservation Corps	$	(1,000)	0	(-1000)
Permanent Appropriations	$	554,072	519,681	-34,391
Cooperative Work, Trust Fund	$	329,086	329,502	+416
Reforestation Trust Fund	$	30,000	30,000	0
Total, Forest Service	$	2,685,734	3,104,072	418,338

1/ Proposed Legistation: America the Beautiful, includes Land Acquisition and Tree Planting Initiative.

2/ Includes $9,084,000 for current law and $7,533,000 for proposed law.

Three-Year Summary of Appropriations

			1989 Final	1990 Approp. Enacted to Date	1991 Estimate with DCA Reduction	1991 Estimate
			(Dollars in thousands)			
Forest Research	$		139,367	147,182	145,175	148,672
State and Private Forestry	$		86,688	105,806	104,248	56,617
National Forest System	$	1/	1,565,005	1,149,333	1,136,666	1,211,543
	$					
Firefighting	$	2/	(541,616)	561,139	555,004	297,849
Construction	$		235,518	221,960	221,960	222,906
Land Acquisition	$		64,305	63,433	63,433	63,486
Less: Current Estimate	$		0	0	0	-63,486
Subtotal, Land Acquisition	$		64,305	63,433	63,433	0
America the Beautiful, Proposed Legislation:						
Land Acquisition	$	3/	0	0	0	88,869
Tree Planting Initiative	$		0	0	0	175,000
Subtotal, America the Beautiful	$		0	0	0	263,869
Acquisition of Lands for National Forests, Special Acts	$		966	1,068	1,054	1,103
Acquisition of Lands to Complete Land Exchanges	$		325	1,070	1,065	1,105
Gifts, Donations and Bequests for Forest and Rangeland Research	$		2	30	30	30
Range Betterment Fund	$		5,946	4,700	4,643	4,578
Operation and Maintenance of Recreation Facilities	$	4/	0	0	0	16,617
Youth Conservation Corps	$		(1,000)	(1,000)	(1,000)	0
Tongass Timber Supply Fund	$		35,999	0	0	0
Resource Management, Timber Receipts	$		97,505	0	0	0
Highway Construction: Mount St. Helens National Monument	$		0	0	0	0
Subtotal, Appropriated Funds	$	5/	2,239,406	2,256,320	2,233,278	2,224,889

Three-Year Summary of Appropriations

			1989 Final	1990 Approp. Enacted to Date	1991 Estimate with DCA Reduction	1991 Estimate
			(Dollars in thousands)			
Permanent Appropriations, Working Funds:						
Expenses, Brush Disposal	$		54,456	64,663	64,663	66,279
Licensee program:						
Smokey Bear and Woodsy Owl	$		77	119	119	118
Restoration of Forest Lands and Improvements	$		122	106	106	107
Timber Roads,						
Purchaser Election	$		9,837	4,878	4,878	4,859
Rescission, Purchaser Election	$	6/	(40,000)	0	0	0
Timber Salvage Sales	$		131,967	59,997	59,997	32,914
Tongass Timber Supply Fund	$		0	52,441	52,441	43,887
Operation and Maintenance of Quarters	$		5,648	5,770	5,770	5,888
Subtotal, Working Funds	$		202,097	187,973	187,973	154,052
Permanent Appropriations, Payments to States:						
Payment to Minnesota	$		1,116	716	716	716
Payments to Counties, National Grasslands	$		15,664	11,500	11,500	11,338
Payments to States,	$					
National Forests Fund	$		353,806	350,700	350,700	353,575
Subtotal, Payments to States	$		370,586	362,916	362,916	365,629
Total, Permanent Appropriations	$		572,683	550,889	550,889	519,681
Cooperative Work, Trust Funds	$		294,264	315,117	315,117	329,502
Reforestation Trust Fund	$		31,171	30,000	30,000	30,000
Total, Forest Service	$		3,136,524	3,151,336	3,129,284	3,104,072
	FTE		39,121	40,000	40,000	39,065

1/ Due to a misinterpretation of the reappropriation of 1988 unobligated balances into the FY 1989 NFS account, the final Treasury Statement balance overstates the FY 1989 Budget authority by $9,117,000. The NFS total of $1,585,005 reflects the actual budget authority in FY 1989.

2/ Financed in National Forest System in FY 1989, shown here for comparison.

3/ Proposed Legislation: America the Beautiful, includes Land Acquisition and Tree Planting Initiative. If proposed legislation is enacted Land Acquisition will total $88,869,000. The current estimate is $63,486,000.

4/ Includes $9,084,000 for current law and $7,533,000 for proposed law.

5/ The appropriated funds total does not reflect $13 million transferred to the Forest Service from discretionary funds appropriated to the President for emergency work made necessary by recent natural disasters. The $13 million is distributed as follows: Research $.5 million, S&PF $3.0 million, NFS $8.1 million, Firefighting $.9 million, and Construction $.5 million.

6/ Not reflected in the totals is recision of $40,000,000 for FY 1989 for Timber Roads, Purchaser Election.

Summary of Receipts

		1989 Final	1990 Estimate	1991 Estimate
			(Dollars in Thousands)	
National Forest Fund:				
Power	$	863	1,200	1,400
Minerals	$	34,763	12,900	12,700
Land uses	$	4,276	4,600	6,100
Timber	$	875,734	900,000	950,000
Grazing	$	10,073	9,400	9,400
Recreation, admission, and user fees	$ 1/	38,042	34,700	44,700
Subtotal, National Forest Fund receipts	$	963,755	962,800	1,024,300
National Grasslands and Utilization:				
Mineral	$	52,092	44,300	43,600
Grazing	$	874	1,100	1,100
Other	$	254	600	650
Subtotal, National Grasslands Receipts	$	53,220	46,000	45,350
Timber sale area betterment (K-V)	$	229,895	230,000	230,000
Timber purchaser road credit	$	(106,841)	(130,000)	(130,000)
Timber salvage sales (FY 89 and FY 91)	$ 2/	144,487	100,000	80,000
Subtotal, amount subject to payments to states and counties	$	1,487,896	1,448,800	1,459,650
Subtotal, receipts	$	1,291,187	1,238,800	1,229,650
Brush disposal	$	94,458	64,000	64,000
Timber salvage sales	$	82,887	63,900	63,900
Cooperative contributions	$	16,783	16,800	16,800
All other	$			
Total Forest Service receipts	$	1,514,953	1,474,900	1,486,750
Mineral leases and power licenses on public domain lands	$ 3/	181,258	128,300	126,400
Oregon and California Grant Lands	$ 4/	33,940	36,000	36,000
Total revenues generated from lands managed by the Forest Service	$	1,730,148	1,639,200	1,647,153

1/ Includes $10 million for proposed legislation in FY 1991.

2/ Include Timber Salvage Sales receipts as directed by legislation.

3/ Represents noncash receipts from NFS lands deposited directly to USDI.

4/ Represents Forest Service receipts transferred to USDI from special O&C account.

Mission and Organization

The Forest Service has the Federal responsibility for national leadership in forestry. The Agency's mission is caring for the land and serving people. This role includes participating at the national level in setting priorities, establishing policies, and formulating and implementing programs.

The primary purpose of Forest Service programs is to provide maximum benefits to the public through proper management and use of renewable natural resources in the Nation's forests and rangelands. These benefits take the form of clean water, wood and paper products, a high quality environment for outdoor recreation, energy and minerals, preserving wilderness, producing forage for grazing livestock, and abundant fish and wildlife. All are essential and contribute to the social and economic well-being of Americans.

The development of human resources is an added and valuable part of the Forest Service mission. The Forest Service administers and hosts programs that provide work, training, and education to the unemployed, underemployed, elderly, young, and others with a productive potential.

The Forest Service carries out its mission through programs in three major areas:

Forest Research

Forest Service research serves society by developing and communicating scientific information and technology needed to protect, manage, and use of the Nation's 1.6 billion acres of forest and related rangeland. This program seeks better ways to use forest and rangeland resources by developing technology to reduce costs, increase productivity, and protect environmental quality.

Forest Service research involves an extensive array of biologic, economic, engineering, and social disciplines. The program is coordinated with research at 61 forestry schools and State agricultural experiment stations at land grant institutions. International forestry is supported by research through cooperation with other U.S. agencies, the United Nations, and foreign countries. The Forest Service is a member of the Internation Union of Forestry Research Organizations (IUFRO).

State and Private Forestry

Forest Service cooperative State and private forestry programs protect natural resources and improve management and production on nonindustrial private forest lands. These programs are delivered through State Foresters or equivalent State officials providing assistance and coordination to landowners, operators, wood processors, and State and local agencies.

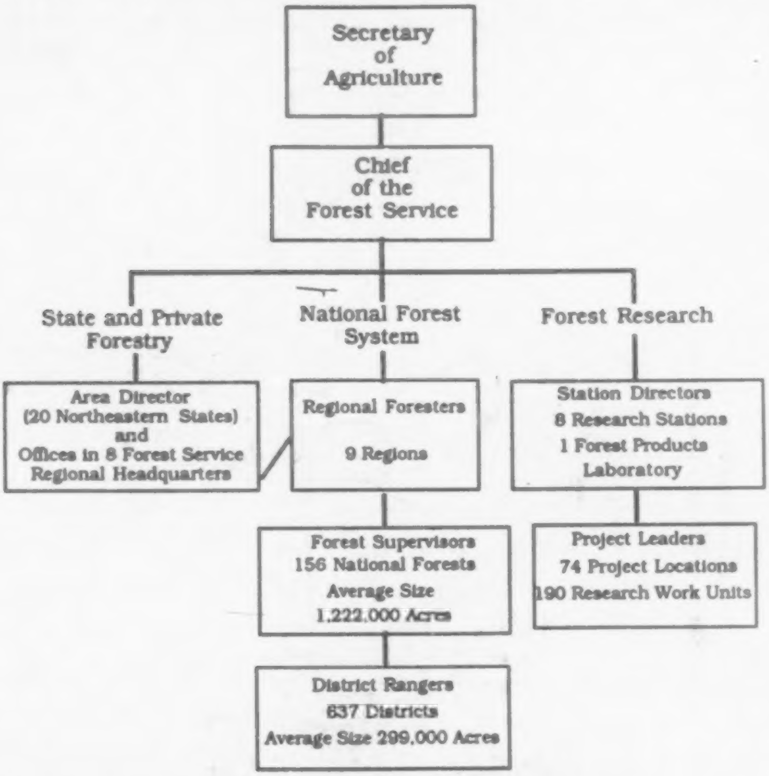
Fifty-seven percent of the Nation's commercial forest land is in nonindustrial private ownership. Such lands total more than 276 million acres and are important in meeting national needs for natural resources. Federal assistance is provided for specific activities and projects of national benefit to improve the productive potential and efficient use of these lands. Federal assistance is targeted to fulfill Federal roles and meet national interest objectives which protect non-Federal wilderness from fire; reduce losses of timber and wood products from damaging insects and disease; increase timber growth and harvests; protect soil and water resources in rural and urban areas for multiple use; and improve efficiency and reduce waste in wood product harvesting, processing, and marketing.

Management of National Forests and Grasslands

The Forest Service manages about 191 million areas of public land in 44 States, Puerto Rico, and the Virgin Islands. These public lands, known collectively as the National Forest System, encompass 156 National Forests, 19 National Grasslands, and 13 Land Utilization Projects. The natural resources on these lands are some of the Nation's greatest assets and have major economic, environmental, and special significance for all Americans.

The Forest Service manages the National Forest System under the multiple use concept for forage, fish and wildlife, water, wilderness, outdoor recreation, and sustained production of timber. The energy and mineral resources on these lands also contribute significantly toward meeting the Nation's needs for hard rock minerals, coal, oil, gas, and geothermal resources.

United States Department of Agriculture Forest Service Organizational Chart


Secretary of Agriculture
Chief of the Forest Service
State and Private Forestry
National Forest System
Forest Research
Area Director (20 Northeastern States) and Offices in 8 Forest Service Regional Headquarters
Regional Foresters
9 Regions
Station Directors
8 Research Stations
1 Forest Products Laboratory
Forest Supervisors
156 National Forests
Average Size
1,222,000 Acres
Project Leaders
74 Project Locations
190 Research Work Units
District Rangers
637 Districts
Average Size 299,000 Acres

State and Private Forestry cooperative assistance is provided through the 50 State Foresters on management, use, and protection of non-Federal forest land.

National Forest System administration directs and carries out the multiple use management of the 191 million acres of the National Forest System for wood, water, wildlife, range, forage, and recreation purposes.

Research components are:
Forest protection
Resource analysis
Timber management
Forest environment, and
Forest products and harvesting

Field Offices of the Forest Service

United States Department of Agriculture

REGIONAL HEADQUARTERS AND NATIONAL FORESTS

Northern Region

Federal Bldg.
P.O. Box 7669
Missoula, MT 59807

Idaho

Clearwater	Orofino 83544
Idaho Panhandle National Forests	Coeur d'Alene 83814
Coeur d'Alene	
Kaniksu	
St. Joe	
Nez Perce	Grangeville 83530

Montana

Beaverhead	Dillon 59725
Bitterroot	Hamilton 59840
Custer	Billings 59103
Deerlodge	Butte 59703
Flathead	Kalispell 59901
Gallatin	Bozeman 59771
Helena	Helena 59626
Kootenai	Libby 59923
Lewis and Clark	Great Falls 59403
Lolo	Missoula 59801

Southwestern Region

Federal Bldg.
517 Gold Ave. SW
Albuquerque, NM 87102

Arizona

Apache-Sitgreaves	Springerville 85938
Coconino	Flagstaff 86004
Coronado	Tucson 85701
Kaibab	Williams 86046
Prescott	Prescott 86303
Tonto	Phoenix 85010

New Mexico

Carson	Taos 87571
Cibola	Albuquerque 87112
Gila	Silver City 88061
Lincoln	Alamogordo 88310
Santa Fe	Santa Fe 87504

Pacific Southwest Region

630 Sansome St.
San Francisco, CA 94111

California

Angeles	Arcadia 91006
Cleveland	San Diego 92188
Eldorado	Placerville 95667
Inyo	Bishop 93514
Klamath	Yreka 96097
Lassen	Susanville 96130
Los Padres	Goleta 93117
Mendocino	Willows 95988
Modoc	Alturas 96101
Plumas	Quincy 95971
San Bernardino	San Bernardino 92408
Sequoia	Porterville 93257
Shasta-Trinity[1]	Redding 96001
Sierra	Fresno 93721
Six Rivers	Eureka 95501
Stanislaus-Calaveras Big Tree[1]	Sonora 95370
Tahoe	Nevada City 95959
Lake Tahoe Basin Management Unit	South Lake Tahoe 95731

Rocky Mountain Region

11177 West 8th Ave.
P.O. Box 25127
Lakewood, CO 80225

Colorado

Arapaho-Roosevelt[1]	Ft. Collins 80526
Grand Mesa, Uncompahgre and Gunnison[1]	Delta 81416
Pike-San Isabel[1]	Pueblo 81008
Rio Grande	Monte Vista 81144
Routt	Steamboat Springs 80487
San Juan	Durango 81301
White River	Glenwood Springs 81602

Nebraska

Nebraska Samuel R. McKelvie[1]	Chadron 69337

South Dakota

Black Hills	Custer 57730

Wyoming

Bighorn	Sheridan 82801
Medicine Bow	Laramie 82070
Shoshone	Cody 82414

Intermountain Region

Federal Bldg.
324 25th St.
Ogden, UT 84401

Idaho

Boise	Boise 83702
Caribou	Pocatello 83201
Challis	Challis 83226
Payette	McCall 83638
Salmon	Salmon 83467
Sawtooth	Twin Falls 83301
Targhee	St. Anthony 83445

Nevada

Humboldt	Elko 89801
Toiyabe	Sparks 89431

Utah

Ashley	Vernal 84078
Dixie	Cedar City 84720
Fishlake	Richfield 84701
Manti-LaSal	Price 84501
Uinta	Provo 84601
Wasatch-Cache[1]	Salt Lake City 84138

Wyoming

Bridger-Teton[1]	Jackson 83001

Pacific Northwest Region

319 SW Pine St.
P.O. Box 3623
Portland, OR 97208

Oregon

Deschutes	Bend 97701
Fremont	Lakeview 97630
Malheur	John Day 97845
Mt. Hood	Gresham 97030
Ochoco	Prineville 97754
Rogue River	Medford 97501
Siskiyou	Grants Pass 97526
Siuslaw	Corvallis 97339
Umatilla	Pendleton 97801
Umpqua	Roseburg 97470
Wallowa-Whitman[1]	Baker 97814
Willamette	Eugene 97440
Winema	Klamath Falls 97601

Washington

Colville	Colville 99114
Gifford Pinchot	Vancouver 98661
Mt. Baker-Snoqualmie[1]	Seattle 98104
Okanogan	Okanogan 98840
Olympic	Olympia 98507
Wenatchee	Wenatchee 98801

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[1] Two or more separately proclaimed National Forests under one supervisor

Eastern Region
310 West Wisconsin Ave.
Milwaukee, WI 53203

Illinois

Shawnee	Harrisburg 62946

Indiana and Ohio

Wayne-Hoosier[1]	Bedford 47421

Michigan

Hiawatha	Escanaba 49829
Huron-Manistee	Cadillac 49601
Ottawa	Ironwood 49938

Minnesota

Chippewa	Cass Lake 56633
Superior	Duluth 55801

Missouri

Mark Twain	Rolla 65401

New Hampshire and Maine

White Mountain	Laconia 03247

Pennsylvania

Allegheny	Warren 16365

Vermont and New York

Green Mountain and Finger Lakes	Rutland 05701
Grey Towers National Historic Landmark	Milford 18337

West Virginia

Monongahela	Elkins 26241

Wisconsin

Chequamegon	Park Falls 54552
Nicolet	Rhinelander 54501

Southern Region
1720 Peachtree Rd., NW.
Atlanta, GA 30367

Alabama

National Forests in Alabama[1]	Montgomery 36107
William B. Bankhead	
Conecuh	
Talladega	
Tuskegee	

Arkansas

Ouachita	Hot Springs Nat'l Park 71902
Ozark-St. Francis[1]	Russellville 72801

Florida

National Forests in Florida	Tallahassee 32301
Apalachicola	
Choctawhatchee	
Ocala	
Osceola	

Georgia

Chattahoochee and Oconee[1]	Gainesville 30501

Kentucky

Daniel Boone	Winchester 40391

Louisiana

Kisatchie	Pineville 71360

Mississippi

National Forests in Mississippi[1]	Jackson 39269
Bienville	
Delta	
DeSoto	
Holly Springs	
Homochitto	
Tombigbee	

Southern Region (continued)

North Carolina

National Forests in North Carolina[1]	Asheville 28802
Croatan	
Nantahala	
Pisgah	
Uwharrie	

Puerto Rico

Caribbean	Rio Piedras 00928

South Carolina

Francis Marion and Sumter[1]	Columbia 29202

Tennessee

Cherokee	Cleveland 37311

Texas

National Forests in Texas[1]	Lufkin 75901
Angelina	
Davy Crockett	
Sabine	
Sam Houston	

Virginia

George Washington	Harrisonburg 22801
Jefferson	Roanoke 24001

Alaska Region
Federal Office Bldg.
P.O. Box 21628
Juneau, AK 99802

Alaska

Chugach	Anchorage 99501
Tongass-Chatham	Sitka 99835
Tongass-Ketchikan	Ketchikan 99901
Tongass-Stikine	Petersburg 99833

RESEARCH HEADQUARTERS AND STATE AND PRIVATE FORESTRY

Intermountain Forest and Range
Experiment Station
324 25th St., Ogden, UT 84401

North Central Forest Experiment Station
1992 Folwell Ave., St. Paul, MN 55108

Northeastern Forest Experiment Station
100 Matsonford Road, Suite 200
Radnor, PA 19087

Pacific Northwest Forest and Range
Experiment Station
P.O. Box 3890, Portland, OR 97208

Pacific Southwest Forest and Range
Experiment Station
1960 Addison St., Berkeley, CA 94704

Rocky Mountain Forest and Range
Experiment Station
240 West Prospect Ave., Fort Collins, CO
80526

Southeastern Forest Experiment Station
200 Weaver Blvd., P.O. Box 2680,
Asheville, NC 28802

Southern Forest Experiment Station
T-10210 U.S. Postal Service Bldg., 701
Loyola Ave., New Orleans, LA 70113

Forest Products Laboratory
One Gifford Pinchot Dr.
Madison, WI 53705

Savannah River Forest Station (DOE)
Box A, Aiken, SC 29802

State and Private Forestry

State and Private Forestry offices are located in the Regional Headquarters except for the Eastern Region. This S&PF office is at:

Northeastern Area-S&PF
100 Matsonford Road, Suite 200
Radnor, PA 19087

Forest
Service

Forest Research

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec (-) from 1990	Inc. (+) or Dec (-) from Base
				[Dollars in thousands]				
Forest protection research	$	33,581	34,901	34,425	36,022	35,644	+1,219	-378
	FTE	508	569	569	569	569	0	0
Resource analysis research	$	16,617	16,625	16,262	17,496	15,582	-680	-1,914
	FTE	475	495	495	495	483	-12	-12
Timber management research	$	26,972	29,794	29,388	30,752	30,000	+612	-752
	FTE	483	491	491	491	490	-1	-1
Forest environment research	$	31,100	34,144	33,678	35,247	36,568	+2,890	+1,321
	FTE	534	583	583	583	604	+21	+21
Forest products and harvesting research	$	30,497	31,718	31,422	32,417	30,878	-544	-1,539
	FTE	348	362	362	362	353	-9	-9
Research challenge cost-share program	$ 1/	800	0	0	0	0	0	0
	FTE	0	0	0	0	0	0	0
Total, Forest Research	$	138,287	147,182	145,175	151,934	148,672	+3,497	-3,262
		2,348	2,500	2,500	2,500	2,499	-1	-1

1/ In FY 1990 and 1991, the research challenge cost-share program will be continued at the FY 1989 funding level, or higher, but will be distributed among the five regular budget line items.

Authorities

P.L. 78-412, Department of Agriculture Organic Act of September 21, 1944 (7 U.S.C. 2250). Section 703.

Erect, alter, and repair buildings necessary to carry out authorized work.

P.L. 93-378, Forest and Rangeland Renewable Resources Planning Act, August 17, 1974, as amended; (16 U.S.C. 1601).

Directs the Forest Service to periodically prepare a long term renewable resource assessment and program.

P.L. 95-113, Food and Agriculture Act of 1977 (Title XIV), as amended December 22, 1981, and as amended by The Food Security Act of December 23, 1985 (7 U.S.C. 1281 note and 7 U.S.C. 3221, 3222, 3291, 3318- 3319d).

Provides for increased cooperation and coordination in the performance of agricultural research by Federal departments and agencies, the States, State agricultural experiment stations, colleges and universities, and other user groups (7 U.S.C. 1281).

Authorizes the Secretary of Agriculture to engage in international agricultural research and extension, including to "assist the Agency for International Development with agricultural research and extension programs in developing countries." Designates USDA as the lead agency of the Federal Government for agricultural research, extension, and teaching. Eliminates restrictions on use of cooperative agreements with universities, and permits cost reimbursable agreements with State cooperating institutions without competition.

P.L. 95-307, Forest and Rangeland Renewable Resources Research Act, June 30, 1978 (16 U.S.C. 1641 et. seq., Sections 1-7).

Updates, clarifies, and consolidates forest and range research authorities; provides a specific forest and rangeland link to Title XIV of the 1977 Farm Bill, the National Forest Management Act of 1976 (NFMA), and the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA); authorizes competitive grants; expands authority for foreign research cooperation. Such sums as are necessary; no expiration date.

Appropriation Summary Statement

Research Mission

Forest Service Research serves society by developing and communicating scientific information and technology needed to protect, manage, and use the renewable natural resources of the Nation's 1.6 billion acres of forest and related rangelands.

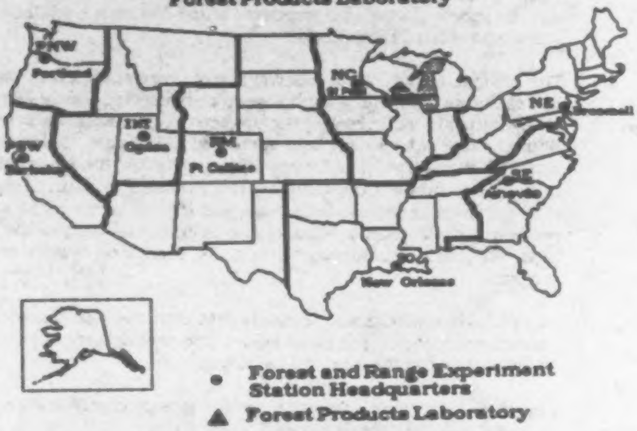
The prospective long term renewable resources situation in the United States shows a widening gap between the expected future demand for many natural resources and the projected availability of those resources. Similar expectations have been identified in the past. However, through scientific management of forests and rangelands, the United States has been able to produce considerably more renewable natural resource outputs, such as recreation, forage, and timber, while at the same time, protecting environmental quality and maintaining the productivity of the land. To continue achieving these goals, the Forest Service research program:

- Develops knowledge and technology to conserve and increase the environmental and economic values and productivity of public and private forest and rangeland resources;
- Provides scientific information needed to help clarify and resolve natural resource policy issues and conflicts;
- Addresses short and long term problems in basic and applied research not dealt with by the private sector;
- Provides information and guidance for private forest landowners, industry and commerce, State agencies and commissions, and individual citizens; and
- Supports international forestry through cooperation with other U.S. agencies, United Nations agencies, and foreign countries and membership in the International Union of Forestry Research Organizations (IUFRO).

Research Administration

Forest Service research is carried out through a network of eight Forest and Range Experiment Stations and the Forest Products Laboratory at Madison, Wisconsin. There are about 190 research work units at 74 project locations throughout the United States, Puerto Rico, and the Pacific Trust Islands.

Forest and Range Experiment Stations
Forest Products Laboratory


PNW
Portland
PSW
Berkeley
INT
Ogden
RM
Ft. Collins
NC
St. Paul
NE
Broomall
SE
Asheville
SO
New Orleans
● Forest and Range Experiment Station Headquarters
▲ Forest Products Laboratory

The Forest Service Deputy Chief for Research directs the research program, with support from seven Washington Office technical staff directors and the directors of the Forest Experiment Stations and the Forest Products Laboratory. The 724 scientists in the program provide new scientific findings and technology through more than 2,200 scientific publications annually.

Research Coordination

Many Forest Service field headquarters and laboratories are located on or near university or college campuses. The proximity and support of outside research complements Forest Service programs, fosters strong coordination among research organizations, and frequently helps achieve goals without increasing the Federal work force. A prominent example of research coordination among institutions and agencies is Forest Service participation in the U.S. Global Change Research Program under the auspices of the Committee on Earth Sciences (CES) of the Federal Coordinating Council for Science, Engineering, and Technology. A second example of coordination developed, in conjunction with wood processing firms is the Center for Advanced Hardwood Processing and Technical Resources in Princeton, West Virginia. Our forestry research challenge cost-share program, initiated in FY 1989 and continuing in FY 1991, reinforces these cooperative ties. Research partners in FY 1989 offered 3.2 million in challenge funds; we matched $502,000 of these funds by providing $418,000 of cost share funds. In addition, about 11 percent of the Forest Service regular research budget supports research in colleges, universities, other research organizations, and industry. The Forest Service also receives contributed funds ($12.8 million in FY 1989) from other governmental agencies and private sector organizations to conduct research of mutual interest. About 36 percent of the funds received from sources other than the Forest Research appropriations are awarded as extramural research agreements.

Research Planning

A strategic plan for the '90s is being prepared to set long term direction for Forest Service research. It builds on user needs, agency and research mission statements, and organizational strengths to guide selection of topics deserving increased emphasis. The strategic plan goes beyond the current strong base program of long term research that increases our understanding of how forest and rangeland ecosystems function. The plan calls for increased emphasis on understanding the ecological effects of environmental changes, balancing resource uses, and understanding human valuation of renewable resources. Forest and Range Experiment Stations and the Forest Products Laboratory are each preparing their own strategic plans, linked to the national plan, that will provide additional detail about problems and program priorities in their station territories.

Long term research programs on specific topics are planned based on research needs identified in the national strategic plan, national forest land management plans, State resource plans, and Station strategic plans. Research needs are also assessed through periodic research program evaluations with input from research peers, such as university scientists, and research users in governmental agencies and the private sector.

Another consideration in planning the research program is a comparison between research costs and expected returns. Economic efficiency is only one dimension of research productivity, but it is useful in assessing some types of projects. These evaluations indicate that forestry research in general is a highly productive investment, comparing favorably with similarly calculated rates of return from agricultural research.

FY 1991 Program

The FY 1991 proposal for Forest Research has been significantly reoriented toward the most critical natural resource issues facing the Nation and world today. Emphasis is on six priority research programs addressing the most critical natural resources issues. The proposal focuses increased funding on prority research programs, primarily by redirecting funds from the broad array of programs that form the foundation for Forest Service Research.

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
		(Dollars in thousands)		
Total Forest Research. .$	138,267	145,175	151,934	148,672
Priority Research Programs. . . . .$	39,116	47,663	50,046	62,961
Foundation Research Program. . . . .$	99,151	97,512	101,888	85,711

Details of these six priority research programs are discussed on the following pages:

- Global change and other effects;

- Water quality;

- Threatened and endangered species;

- Enhancing forest-based economies in rural America;

- Southern forest productivity; and

- Catastrophic forest fires.

The proposal also emphasizes the Forest Service's Tropical Forestry Action Plan (TFAP). Additional details on the Forest Service's International Forestry Program, including its research component and contribution to TFAP, are included in the Special Exhibits section.

Expanded emphasis on priority research programs will be accomplished in several ways. The completion of some studies will be accelerated so research on certain topics can be reduced or terminated efficiently. The start of new work not related to critical problems will be delayed. The charters of some research work units will be modified and others will be terminated to redirect funding and scientific effort toward the most critical problems.

Knowledge and skills needed to work on the higher priority research programs will result in about 90 new positions being created and reassignment of about 80 positions.

Past administrative efforts to improve efficiency and contribute to reductions in the Federal deficit have included merging personnel, procurement, information management, and other support services for Forest Service research programs with counterpart staffs at several regional offices and national forest headquarters. These efforts have resulted in significant cost savings and continue to do so.
Since FY 1980, the Forest Service has reduced the size of its research organization. Cumulatively through FY 1989, the Forest Service has closed 12 research locations, reduced the number of research work units by 20 percent, and reduced the number of annual scientist-years by about 25 pecent.

Proposed changes in FY 1991 include:

- Increasing forest environment research by $1,321,000 from the FY 1991 base.

- Reducing forest protection research by $378,000; resource analysis research by $1,914,000; timber management research by $752,000; and forest products and harvesting research by $1,539,000, from the FY 1991 base.

- Merging 11 and terminating 6 research work units to focus resources on the highest priority problems. This involves closure of 5 project locations — Bozeman, MT; Berea, KY; University Park, PA; Amherst, MA; and Orono, ME.

Planned FY 1991 actions and their impacts are described in more detail under each Forest Research budget line item.

The Forest Service
United States Department of Agriculture

Priority Research Programs

Global Change

U.S. Global Chane Research Program-- Scientific Elements 1/

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
	(Dollars in thousands)			
Climate and hydrolic systems:	$ 1,261	1,471	1,545	2,100
Biogeochemical dynamics:	1,682	1,961	2,050	2,800
Ecological system and dynamics:				
Northern forest ecosystems:	3,290	3,836	4,028	5,478
Southern forest ecosystems:	2,592	3,023	3,174	4,316
Interior western forest ecosystems	2,094	2,441	2,563	3,486
Pacific west forest ecosystems:	1,994	2.325	2,441	3,320
Earth system history:	190	210	220	300
Human interactions:	721	840	882	1200
Total	$ 13,814	16,107	16,912	23,000

1/ Categories displayed for FY 1991 are consistent with the categories used in the Committee on Earth Sciences (CES) U.S. Global Change Research Program as reported in July 1989.

Forest ecosystems are prime topics of concern in regard to global change. The U.S. Global Change Research Program, developed by the Committee on Earth Sciences (CES), places heavy emphasis on the need to understand the impacts of global changes on forest ecosystems and the impacts of forest management practices on the global environment. The Forest Service program is fully incorporated in the CES Global Change Program. Forest Service research places greatest emphasis on the CES Ecological Systems and Dynamics Science Element and subdivides this element into Northern, Southern, Interior Western, and Pacific Western categories to provide cohesive regional forest ecosystem-based approaches within the National program.

Predicted global climatic changes will significantly affect the productivity, health, and diversity of forest ecosystems worldwide. Sound knowledge of forest ecosystem dynamics in a changing atmosphere is needed to evaluate policy questions that are central to the debate over global change. Sound forest management practices will be critical for slowing the predicted change and for reducing the environmental, economic, and social impacts brought about by global change.

The effect of acid deposition and air pollution on forests has been a major environmental and policy concern during the present decade and serves as a precursor for the broader issues involved with global change. Climate variations are known to provide an initial ecosystem stress that often leads to critical stress by other factors. Evidence is mounting that the Earth's climate itself is changing and that these changes will have a major effect on forest ecosystems. The Forest Service approach to global change emphasizes integrated forest ecosystem studies and the interaction of multiple stresses on those ecosystems.

This priority research program will broaden our research scope to encompass other interactions between forests and the atmosphere that affect forest productivity. It will address concerns about the future state of our forests in a changing physical and chemical climate, emphasize fundamental science, and investigate multiple pollutants and the effects of atmospheric change and variability on forest ecosystems.

The program also considers increased use of forest products to provide a useful mitigation opportunity by taking carbon dioxide from the atmosphere and store it into useful products. Healthy forests recycle carbon at a much faster rate than the typical millions of years needed to replenish the carbon used to make petroleum-based products.

The program consists of seven broad areas of research, within the context of the CES science elements:

- Species life histories and distribution and community composition;

- Energy, carbon, water, and nutrient cycling;

- Water yields, erosion, and sedimentation;

- Fire severity and occurrence;

- Aquatic ecosystems and fisheries;

- Wildlife and domestic species; and

- Microbes, plant pathogens, and insects.

Water Quality: Cumulative Effects from Forests and Rangelands

	FY 1989 Final	FY 1990 Estimate. with DCA Reduction	FY 1991 Base	FY 1991 Estimate
	(Dollars in thousands)			
Water movement. . . . $	79	138	146	238
Sediment movement. .$	514	880	924	1,527
Biological effects. . . . .$	1,011	1,734	1,820	3,006
Total. . . . .$	1,604	2,752	2,890	4,771

There is widespread public concern that land use activities on our Nation's forest, range, and agricultural lands are adversely affecting the quality of surface and ground water. The U.S. Department of Agriculture has proposed that research agencies institute a coordinated plan to fill key information and technology gaps. In response, the Forest Service has included water quality research as a priority program and is actively implementing research on the major problems confronting land managers.

Forests comprise one-third of the Nation's land surface yet 60 percent of the nations total streamflow orignates on these lands. Water quality concerns vary greatly throughout the Nation. For example, in the Northeast and Lake States there are concerns over effects of mining, pest epidemics, atmospheric deposition, and increased timber harvesting. These activities may lead to depletion of nutrients from forest soils and changes in the chemistry of streams, lakes, and ground water. In the West, impacts of grazing, timber harvest, mining, and fire on water quality, anadromous and resident fish habitat, and riparian ecosystems are major concerns. In the South, the effects of short harvest rotations and site preparation on long term site productivity and aquatic resources are important issues.

This priority research program will take advantage of the existing scientific expertise in Forest Service watershed research and related programs in the Agency. Research in FY 1991 will focus on ecosystem processes and management activities affecting the quality of water from forests:

- Cumulative effects of water movement through watersheds; routing of subsurface flow, flow routing in complex channel systems, and effects of watershed size;

- Cumulative effects of sediment movement through watersheds; erosion processes, sediment delivery to channels, channel morphology, and sediment prediction models;

- Cumulative effects in biological communities; changes in aquatic habitat, response of biological communities, and long term effects of atmospheric deposition and climate change.

A better understanding of cummulative effects will enable watershed managers and water regulators to identify more accurately the extent and severity of damages and to link more explicity land management activities and effects. This knowledge will help resource managers alter existing management practices and devise new ones to protect surface and ground water quality. It will also help regulators better target rules that effectively protect the environment.

Threatened, Endangered, and Sensitive Plant and Animal Species

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
		(Dollars in thousands)		
Threatened and endangered Animals				
Red-cockaded woodpecker. $	446	426	447	496
Old growth	0	0	0	0
Other forest and rangeland	721	801	841	829
Acquatic	0	0	0	0
Sensitive Species (Animals)				
Spotted owl	1,870	3,113	3,269	3,024
Other old growth	377	725	761	875
Other forest and rangeland	39	52	55	0
Acquatic	0	112	118	118
Plants				
Threatened & endangered.	0	0	0	300
Sensitive	57	76	80	92
Total $	3,510	5,305	5,571	5,734

The protection and recovery of threatened, endangered, and sensitive (TES) species is among the most urgent challenges in the stewardship of our natural resources. The National Science Foundation has reported that "The extinction event we are witnessing is the most catastrophic loss of species in the last 65 million years. Most importantly, it is the first major extinction event that has been caused by a single species" (people).

The loss of species through accelerated distinction reduces the biological diversity of the earth. The reduction in diversity is important because human existence and prosperity are based largely on our ability to utilize the diverse biological properities of plants, animals, fungi, and microorganisms for food, clothing, shelters, medicines and other products. Protecting viable populations of plants and animals may conflict with producing a consistent flow of forest products and other expected outputs from lands allocated to multiple uses. Increased demands on our public lands are intensifying these conflicts. Public comments on Forest Plans and changes on private lands have increased our awareness that National Forest System lands provide the major source of habitat remaining for many rare and sensitive species. The overall goal of this priority research program is to provide the knowledge and techniques needed to protect and recover threatened, endangered, and sensitive species.

The Forest Service has directed considerable research toward providing new knowledge about TES species and resolving conflicts through a better understanding of management alternatives and consequences, including;

- Establishing the Spotted Owl Research, Development, and Applications program to learn more about managing this species;
- Supporting studies that focus on old growth dependency and other unique characteristics of habitats for sensitive species;
- Developing techniques to recover red-cockaded woodpecker populations while continuing to provide other forest products and values;
- Cooperating closely with the USDI Fish and Wildlife Service to develop recovery strategies for the Puerto Rican parrot that enabled the population to triple in recent years (prior to Hurricane Hugo); and
- Initiating grizzly bear studies that focus on the ecology and management of critical food plants and on the evaluation of nutritional potential of habitats.

There is a critical need to expand ongoing research and to initiate new studies on those plant and animal species most likely to be adversely affected by human activities. New knowledge and understanding are needed at factors affecting TES species, from genetics to broad geographic considerations. Collectively, these topics are embraced by the new science of conservation biology to which Forest Service research will contribute significantly. In this research program we will:

- Continue research on threatened and endangered species, especially on the conditions required to assure their continued survival;
- Continue research on the spotted owl to investigate geographic variation in habitat requirements, population dynamics, and characteristics of the prey base (food supply);
- Accelerate research on determining the cumulative effects of resource management alternatives on habitats for sensitive species;
- Initiate research on sensitive species in aquatic ecosystems, and
- Accelerate and initiate research on threatened, endangered, and sensitive plant species.

Knowledge generated by this priority research program will enable land managers to adapt management practices to promote the survival and recovery of threatened, endangered, and sensitive species whose habitat is forest and rangeland, thereby conserving the biological diversity of the earth.

Enhancing Forest-Based Economies in Rural America

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
	(Dollars in thousands)			
Assisting forest-dependent rural economies to diversify. .	$ 1,110	1,800	1,890	3,677
Enhancing the international and domestic competitiveness of forest-based industries.	$ 3,580	4,840	5,082	7,756
Total	$ 4,680	6,640	6,972	11,433

Forest Service research is uniquely positioned to enhance the forest-dependent economies in rural America. Research is an integral part of the Agency's and Department's Rural Development Program. There are two key areas where Forest Service research can contribute: identify opportunities to help communities that are economically dependent on forest land to diversify their economies by developing new uses for forest resources and forest land; and extend the technical information base to help forest-based industries improve their competitiveness in both domestic and international markets.

Forest-based enterprises are major employers in rural America. Yet communities dependent on a single industry for their economic well-being risk serious injury if the market for that product or forest use declines. Research will help by providing information to:

- Diversify into new uses for timber from forest land

- Diversify into new non-commodity uses of forest land.

Competitiveness of existing forest-based industries, both domestically and internationally, is related to both timber supplies and market access. Key contributions from Forest Service research are:

- Developing high quality products from a changing forest resource;

- Performing advanced product engineering;

- Protecting wood in use;

- Providing information for harmonizing U.S. and foreign product standards and building codes; and

- Evaluating foreign technology that might benefit U.S. forest-based industries.

Forest resources play a vital role in the social and economic well-being of our Nation. The twin future trends towards increasing acreages of private plantation forests and managing public forests for multiple resource uses mean that future timber and other resource management decisions must be fully integrated to preserve and enhance the economic and social health of rural America.

Southern Forest Productivity

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
		(Dollars in thousands)		
Timber management. . . . .$	3,107	3,591	3,771	4,500
Wildlife and fish habitat. . .	504	614	645	809
Watershed management. . .	534	543	570	543
Insect and disease.	2,219	2,552	2,680	2,415
Economics and inventory. .	644	730	766	674
Forest products and harvesting.	1,465	1,649	1,731	1,849
Total. . . . .$	8,473	9,679	10,163	10,790

The 182 million acres of forest land in the 13 southern states from Virginia to Texas comprise one of the Nation's greatest resources. Timber products represent the south's most valuable cash crop, and tourism, outdoor recreation, and retirement values have contributed significantly to the region's economic growth. Because of their extraordinary productivity, these forest lands have been able to sustain rapid growth in forest industries as well as in resident population and tourism. But these lands are now managed near their limit of productive capability with the current technology. The southern forest resource can continue to provide for increasing demands only if new technology becomes available to forest managers.

An exhaustive analysis of the south's forest resource situation and supply-demand projections contained in "The South's Fourth Forest: Alternatives for the Future," suggests that research will be even more important to southern forest productivity in the future. An accelerated research program to meet future demands on these forests has been developed by the Forest Service in cooperation with universities and forest industry in the south. This research program will provide the scientific basis to answer three major questions:

1. How can we enhance timber production in southern forests?

2. What are the competing uses for southern forests, and how can use conflicts be avoided or resolved?

3. What management techniques are needed to assure that increased production of timber and other forest products does not adversely affect environmental quality in forests of the south?

To answer these questions, the expanded research program will emphasize:

- Development and testing of biotechnology for tree improvement, pest control, and manufacturing processes for new forest products;

- Quantitative studies to provide new mathematical models of tree and forest stand development and methods for evaluating the impacts of pests and environmental stresses on trees;

- Ecosystem analysis to understand the physical and biological processes in southern forests and the long term effects of forest management practices on ecosystem structure and function;

- Vegetative management alternatives for controlling unwanted and competing vegetation and silvicultural prescriptions to regulate species composition and maintain diversity;

- Soil-water environment interactions studies to understand and evaluate the fate and movement of pesticides, integrated pest management alternatives to the use of chemicals, and the relationships of soil biological, chemical, and physical processes to forest land productivity;

- Resource management interaction studies to develop procedures for predicting, controlling, and mitigating the impacts of management activities for one forest resource on the quantity and quality of other resources;

- Decision analysis research to provide the mathematical models, computer programs, and other tools forest managers need to make decisions with greater precision and reliability; and
- Research to extend the timber resource through development of better harvesting systems, increased utilization, and improved wood processing technology.

Catastrophic Forest Fires

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Base	FY 1991 Estimate
		(Dollars in thousands)		
Characterization of fires: fire behavior, physics, and chemistry (smoke). . .$	1,976	2,113	2,219	2,466
Ecosystems response to fires: soil, water, vegetation, and wildlife. . .$	1,478	1,210	1,271	1,380
Fire management, planning and economics. . . . .$	871	899	944	545
Fire meteorology and fire danger. . . . . $	1,516	1,547	1,624	1,194
Fire effects and use. . . . . .$	1,192	1,293	1,357	1,625
Total. . . . . $	7,035	7,062	7,415	7,210

Catastrophic forest fires are becoming common. The recent events of the 1985, 1987, and 1988 fire seasons are sobering indicators of this fact. Why is this? What is happening in our environment to set the stage for the more frequent occurrence of catastrophic fires? Some of the contributing factors are persistent drought (a possible indicator of global climate change); fuel buildups (particularly in wilderness areas); the effect of insects, disease, and pollutants on wildland vegetation; and the ever increasing trend toward development and human activities in wildland areas.

Fire is a natural part of most of our wildland ecosystems; in fact it is necessary for their continued health and vitality. But where multiple resource and socio-economic values exist, it must be managed to avoid catastrophic results. When excessive fuel buildups combine with dry conditions and strong winds, high intensity fires can result in erratic or unpredictable fire behavior, and changes occur in soil microbiology, nutrient cycling, erosion and sedimentation, wildlife habitat, vegetation composition, and regeneration. These changes are often incompatible with management objectives or social values. In addition, forest fire smoke can affect local, regional, and global air quality and may be harmful to human health.

When a fire occurs adjacent to or spreads into an area of human habitation, the results can be devastating. Millions of dollars in damages and loss of life have resulted from fires in the wildland/urban interface. With continued urban development into wildland areas and the gradual migration of many city dwellers to more rural settings, this problem is expected to increase.

This research program will accelerate studies currently underway on characterization of combustion processes and smoke, improved fire behavior prediction and modeling, determination of direct fire effects and biological responses to fire, and use of medium and extended-range weather forecasts for fire management. It will also emphasize new research to provide needed knowledge of fire behavior in wildland/urban interface areas, extreme fire behavior phenomena, crown fires and long range spotting, effects of chronic smoke exposure, and long term ecosystem responses to catastrophic fires.

The information provided by this research will lead to improved management of future catastrophic fires, thereby reducing damage to natural resources and lowering the risk to life and property. In addition, it will allow resource managers to develop better receovery plans after the catastrophic fires.

Forest Protection Research

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)			
Forest protection research ....$	33,561	34,901	34425	36,022	35,644	-378
FTE	538	569	569	569	569	0

Objective

To enhance the productivity and health of forest and range ecosystems. To develop better methods for (1) preventing, predicting, controlling, and reducing the effects of wildfires and insects and disease; and (2) using fire in a productive and environmentally sound manner. To counter the trend of increasing susceptibility in our Nation's forests to major insect and disease damage. To acquire the basic knowledge about forest-atmosphere interactions needed to monitor and predict global change effects on forests caused by climate, air pollutants and other changing atmospheric factors.

Program description

Fire and Atmospheric Sciences
Forest Service scientists provide Federal, State, and local fire management agencies with the knowledge and tools needed for safe, efficient, and cost effective fire management. Fire scientists (1) produce information used by managers to lessen the occurrence of fires and to prepare effectively for those fires that do inevitably occur, (2) develop the technology used in the assessment and tactical suppression of fires once they start, and (3) provide information needed to assess the effects of fires on forest ecosystems and air quality.

Atmospheric sciences research ensures that critical knowledge about atmospheric processes needed to understand forest fires, air pollution effects, watershed production, forest and range ecosystem productivity, and insect and disease patterns is available for managers and scientists alike. The program provides: (1) fire managers with technology needed to reduce and control smoke emissions from fires; (2) wilderness managers with the protocols needed to predict the potential effects of air pollutants on wilderness ecosystems as required by the Clean Air Act; and (3) policy makers with the knowledge needed to assess potential forest responses to global change factors such as climate, acid rain, and other air pollutants.

Insects and Diseases

Research on insects and diseases provides the fundamental understanding and technology to: (1) define, measure, and evaluate the economic, social and environmental impacts of destructive insects and diseases on forest resources and on wood in storage and use; (2) detect, assess, and predict changes and trends in the distribution and abundance of insects and diseases and their impacts on resource values; and (3) reduce insect-and-disease-caused problems and damage to acceptable levels through integrated management strategies that are ecologically, economically, and environmentally sound. The overall goal is to improve the health and productivity of forests.

The program includes investigation of these major problems: bark beetles, leaf-eating insects, cone and seed insects, nursery diseases, wood product insects and decay, root diseases, rust and canker diseases, diebacks and declines, and abiotic disease problems such as those caused by air pollution, acid precipitation, drought, and changes in average and extreme temperatures.

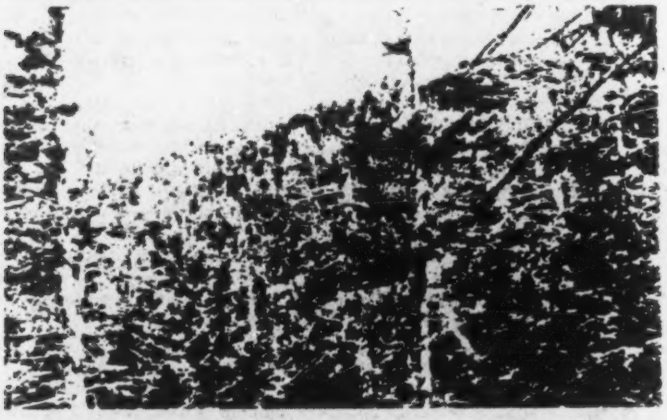
In FY 1991, the insect and disease research program continues to shift toward greater emphasis on fundamental research. Better understanding is needed about how insects and diseases affect forests and how forest conditions and environmental stresses affect insects and diseases, and damage trends. This information is crucial to developing new and innovative control strategies needed for dealing with major forest pests.

Examples of Recent Research Findings:

The Forest Response Program

Congress, environmental groups, the wood products industry, and the general public is concerned about the effects of acid deposition and associated air pollutants on our Nation's forests. Forest declines, believed by some to be caused by air pollutants, have been reported for sugar maples, eastern high-elevation spruce and fir forests, natural southern pine forests, and ponderosa and Jeffrey pines in southern California. Scientific information was needed to support decision making regarding acidic deposition and ozone control and abatement measures. Results are used by the National Acid Precipitation Assessment Program (established by Congress) to develop their 1990 final assessment, by Congress as it address the President's new Clean Air Act, and by the Forest Service in establishing guidelines for wilderness areas designated as Class I Air Quality Areas.

Since 1984, the USDA Forest Service, the U.S. Environmental Protection Agency (USEPA), and the forest industry through NCASI (the National Council of the Paper Industry for Air and Stream Improvement) have supported hundreds of university, private, and government researchers to investigate the factors involved in complex multiple-stress related forest declines. Through a major synthesis and integration effort we are documenting the effects of acid deposition and ozone on forests, with special emphasis on high elevation spruce and fir forests, southern pines, eastern hardwoods and western conifers. The results of these efforts indicate that air pollutants are indeed a contributing stress that adversely affects forests in several regions of the United States.



Dead red spruce on a mountain in Vermont.

Fire dynamics and characterization of emissions from large fires. Smoke production from large fires contributes to degradation of air quality and visibility, and may produce a net flow of "greenhouse gases to the atmosphere. The severity of wildfires is expected to become greater as a result of global climate change. Fire managers, air quality managers, and global climate modelers need information from large fires to improve models for predicting fire behavior, local and regional changes in air quality, and potential effects on global climate.

Large fire experiments have been part of an interagency research project conducted in Canada by the Intermountain Research Station in cooperation with Forestry Canada, the Defense Nuclear Agency, the National Institute of Standards and Technology, and other universities and agencies. Experiments were designed to measure the rate of heat release, fire induced winds, and fire spread phenomena in conjunction with large area fires. Characteristics of gases and particles released from fires were studied from ground based towers, from airborne sampling systems flying through convection columns, and at various distances downwind from the fires. The research is leading to a better understanding of fire behavior along with better estimates of emissions produced by large fires.

Global Change: Influence of Trace Gases. Greenhouse gases are trace constituents in the atmosphere that trap heat from the earth's surface, analogous to the glass panels of a greenhouse. The climate of the earth is therefore affected by the amount of these chemicals in the atmosphere. Higher concentrations of chemicals trap more heat, changing the global atmospheric circulation, hydrologic cycle, and temperatures. Increasing atmospheric concentrations of carbon dioxide, methane, and nitrogen oxides (NOx), all significant greenhouse gases, are causing concern about global warming.

Scientists from the Rocky Mountain Station have been measuring the surface exchange of trace gases as well as temperature and water vapor for the past two years at the Pawnee National Grassland in eastern Colorado. This work is providing important quantification of how the atmosphere and a grassland ecosystem interact. Measurements show that the grassland is a net source of NOx in summer. These findings are particularly significant because to assess the potential magnitude of global climate change, it will be necessary to characterize the exchange of NOx, carbon dioxide, and methane, from many different ecosystems and for all seasons.

Pheromones - A Safe Way to Predict and Control Insect Damage. Pheromones are natural compounds that insects emit as subtle vapors to induce specific behavior in other members of its species. Extremely small amounts regulate patterns of behavior critical to the insect's survival. For example, sex pheromones attract mates. Others attract populations to food, or prevent populations from assembling. Forest Service scientists have studied pheromone-mediated behavior of over two dozen species of forest insect pests. This research has led to products and techniques for detecting pest populations, predicting population and damage trends, timing pesticide applications, and preventing outbreaks, or controlling damage.

As a result of this research pheromones are used in three principle ways to control damage. These strategies: (1) prevent or reduce mating — mating disruption, (2) prevent pest populations from congregating on susceptible hosts — antiaggregation, or (3) trap and destroy adults — trap-out or trap-cropping. A number of these methods are now used operationally. Examples of operational methods are control of gypsy moth and western pine shoot borer by mating disruption and control of gypsy moth, elm bark beetle, and ambrosia beetles by trap-out. The technology for using pheromones for many other forest pests is well along toward practical application. Some of these pests are the major bark beetles, Douglas-fir tussock moth, spruce budworms, other shoot borers, and some seed orchard pests.

The research results have led to the use of pheromones as innovative tools for monitoring, evaluating, or predicting pest population trends and damage, and are now widely used. These methods are generally easier to use, cheaper, environmentally safer than pesticides, and more reliable than traditional methods. Current uses include providing early warnings of outbreaks of Douglas-fir tussock moth; predicting defoliation by western budworms; detecting spread of European pine shoot moth and certifying that nursery stock or Christmas trees are free of this pest and can be shipped interstate; monitoring population trends of spruce budworm, gypsy moth, and elm bark beetle; and predicting damage in seed orchards by pine cone worms.

Innovative funnel traps are used to test the attractiveness of pheromones to mountain pine beetles in the rocky mountains.

The Effects of Ozone on Trees. The damaging effect of ozone air pollution on forest trees was first demonstrated and documented by Forest Service scientists in the early 1960's in the mixed conifer forest in the mountains east of the Los Angeles Basin in southern California and the white pine forests of northeastern U.S. In more recent years, research has increased awareness of the potentially harmful effects of air pollutants, including ozone, on the forests of northeastern, southern, and southwestern United States. Better understanding of these effects is needed to aid the development of future national air pollution policies and abatement programs.

Early Forest Service research on ozone effects focused on the identification and characterization of foliar symptoms such as chlorotic mottle and necrosis of leaves and association of these symptoms with tree death. Leaf and needle symptoms were correlated with ozone exposure. Other factors, such as insects, diseases, and soil moisture also were seen to be involved along with ozone in tree decline and mortality. Ozone tolerance varies considerably between species and among individual trees of the same species. Ozone also has the potential to alter stand composition and species diversity.

Recent Forest Service research has shown that ozone can modify the growth and development of tree seedlings. Photosynthesis and growth of ponderosa pine seedlings are significantly reduced at ozone concentrations normally found in southern California and the Sierra Nevada.

Ozone levels are predicted to remain constant or increase in the near future in forests downwind from large metropolitan areas. Research on forest stress and damage from ozone suggests that current emission standards are insufficient to protect trees, and further increases in ozone emissions will result in increasing forest damage.

Research on the effects of ozone is continuing to: 1) define ozone damage to forest trees in the effort to support the development of reasonable and effective national policies and standards; 2) develop an understanding of how ozone stress interacts with insects and disease pests and other stress factors to cause tree mortality; and 3) develop forest management alternatives that will help mitigate the adverse effects of ozone on native forests.

Aerial Sprays of Gypchek, a Natural Virus, Controls Gypsy Moth. Managers of environmentally sensitive forest lands may soon have access to a safe viral insecticide to control the gypsy moth. As the insect advances south through Virginia and West Virginia, extensive forested acres encompassing the Shenandoah National Park, Blue Ridge Parkway, and George Washington National Forest are experiencing defoliation caused by the gypsy moth and its associated impacts. A highly improved formulation of Gypchek, a natural virus product that kills only gypsy moths, has provided excellent control of the insect in aerial spray trials conducted recently in Maryland and Virginia. Because Gypchek kills only gypsy moths and has no adverse effect on non-target organisms, it is especially suited for use near riparian areas, human habitations, or areas inhabited by rare, threatened, and endangered species.

Gypchek, like all microbial insecticides, is very sensitive to ultra-violet rays and thus degrades rapidly in the environment. Scientists from the Northeastern Forest Experiment Station found that adding a sunscreen to the Gypchek formulation prolonged virus activity, greatly enhancing its effectiveness.

Gypchek is produced through a cooperative effort by the Forest Service and Animal Plant Health Inspection Service (APHIS) for use in the Appalachian Integrated Pest Management Project and against isolated gypsy moth infestations. Commercial production of Gypchek is being facilitated through a technology transfer agreement between the Forest Service and ESPRO Inc.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Forest protection research.	$ 36,022	$35,644	$ -378
FTE	569	569	0

A decrease of $378,000 is proposed from the 1991 base.

FY 1991 Emphasis

This funding level will permit continued emphasis on the highest priority areas of the program, such as basic research on fire behavior, physics, and chemistry, and better understanding of effects of atmospheric variations on forest and range ecosystems. This funding level will also permit continued research on the highest priority major forest pests such as fusiform rust, gypsy moth, southern pine beetle, and western spruce budworm; and will permit research on the effects of environmental stresses on the pathology of trees and their susceptibility to pests, as well as some emphasis on biotechnology to find innovative approaches to pest management. This level of funding also includes $100,000 for the research challenge cost share program.

- Fire Behavior, Physics, and Chemistry. This level of funding permits continued emphasis, on research in fire behavior, physics, and chemistry. Greater understanding in these areas is an essential step toward improving technology in the use of fire as a management tool, and reducing the damage caused by catastrophic wildfires. Catastrophic fires include those with large natural resource impacts, such as the Greater Yellowstone area in 1988, and those that are increasingly endangering life and property in the wildland/urban interface.

- Ecosystem Response to Fire and Atmospheric Variability. This level of funding permits expanded emphasis, on the response of ecosystems to fire and atmospheric conditions, including global change. Our research provides managers with information needed to determine the exact role that forest fires play in the relative productivity, health and diversity of forest ecosystems. Atmospheric variability associated with global change and atmospheric pollutants will cause forest ecosystem effects that are initially more subtle and gradual than forest fires. But in the long run, the sum of effects on forest ecosystems will be much greater than the effects of forest fires alone. Early detection of ecosystem responses to global change from climate variation, stratospheric ozone depletion, and atmospheric pollutants is particularly important in more fragile or environmentally pristine ecosystems, including many of our most valuable wilderness areas. Our ongoing research program is providing objective protocols and techniques for determining these types of responses.

- Stress and its Effect on Pest Damage. Stresses resulting from global changes in climate, atmospheric pollution, and other environmental aberrations will affect the health of forest trees and make them more susceptible to damage by forest insects and disease-causing organisms. Fundamental research is needed to understand the nature of stress in forest trees, the physiological and biochemical basis for stress, and the consequences of stress on disease and on susceptibility of trees to pest outbreaks. This knowledge will provide a basis for taking effective action to minimize damage to forests. Because these stresses will result in significant increases in insect and disease problems, improved control technology that is ecologically sound and environmentally and economically acceptable will be needed.

- Biotechnology. Biotechnology can speed up and improve research on vexing insect and disease pest problems. We are using biotechnology to develop new lines of disease-resistant trees more rapidly and to develop improved biological controls for insect pests. These biological solutions to pest problems help to reduce the need for conventional chemical pesticides that may be hazardous to the environment.

- Major Pests. Emphasis is on developing ecologically based, environmentally and economically acceptable pest management tactics and strategies. This responds to the facts that forests are becoming more susceptible to these major pests, that current damage is at unacceptable levels, and that existing control technology is not sufficiently accepted by the public or the forestry community to be effectively used in pest management programs.

FY 1991 Impacts

Reduce research on:

- Fire management, smoke on roads, and fire danger rating (GA and MI) in the eastern U.S.
- Biological control of root diseases (terminate unit at Corvallis, OR by merging it with another unit at Corvallis).
- Spread and control of annosus root rot in mixed conifer forests of the Sierra Nevadas (terminate unit at Berkeley, CA by merging it with another unit at Berkeley).
- Soil biology as it affects long term site productivity (OR).
- Root rot diseases of western conifers (ID).
- Methods to quantify and predict damage by insect and disease pests and enhance control decisions (terminate unit at Research Triangle Park, NC by merging it with an economics research project at the same location).
- Integrated management of gypsy moth through extramural agreements (WV).
- Biology and control of regional insect and disease pests of central states plantations (MI), and southern hardwoods (MS).
- Control of cone and seed pests in seed orchards with pheromones (OR).
- Use of fertilizers for managing the western spruce budworm (OR).
- Pesticides for control of nursery diseases (CA).
- Identification and taxonomy of fungi causing root diseases (WI).
- Biological control of decay fungi in wood structures and products (WI).
- Effect of environmental stresses on susceptibility of western conifers to damage by western spruce budworm (AZ), northeastern hardwoods by diebacks and declines (CT), and shelterbelt plantings in the Great Plains by diseases (ND).

Terminate research on:

- Fire prevention and fire suppression nationwide (CA, GA, MI, terminate unit at Missoula, MT working on fire retardants).

- Relationship of insects to uneven-aged management of interior, mixed conifer forests (terminate unit at La Grande, OR by merger with a unit at Corvallis, OR).

- Southern pine beetle through extramural agreements (LA).

- Diseases of western nursery trees (CA).

- Attack and survival of tree killing bark beetles (CA).

- Pesticides for protecting individual pine trees of high value from bark beetles (CA), and wood structures from decay fungi (WI).

- All pine diseases except research on resistance of southern pine to fusiform rust (terminate unit at Gulfport, MS by merging it with another Gulfport unit to better focus work on fusiform rust).

- Oak wilt (terminate unit at Stoneville, MS, by merging the remaining hardwood insect research with a Starkville, MS unit).

- Control of the pinewood nematode in pulp chips for export (GA).

- Biology and control of insect pests of shelterbelt plantings (ND).

- Silvicultural control of the mountain pine beetle and western spruce budworm (MT).

- Statistical methods for evaluating pesticide tests in cooperation with the Agricultural Research Service (CA).

Accelerate research on:

- Global change at all stations.

The significant reorientation to address the highest priority research will be implemented by making major shifts in the Forest Insect and Disease Research program. This shift will:

Initiate research on:

- Effect of global change, including pollution, on the severity of root diseases (CA), ecological integrity of sensitive ecosystems (CO), and outbreaks of insect and disease pests (SC).

Increase research on:

- A multifunctional approach using biotechnology to reduce damage by pests (MN) (initiate in MI),

- Environmental fate of insecticides and integrated management systems for pests of seed orchards and managed forests (GA), and

- Effects of intensive forest management practices on damage by forest pests (FL).

Restore research on:

- Eastern hardwoods response to air pollution (PA).

A total of seven research work units will be terminated, six dealing with insect and disease research and one with fire research. The six insect and disease research units will all be terminated through mergers (La Grande and Corvallis, OR; Berkeley, CA; Research Triangle Park, NC; Gulfport and Stoneville, MS) with units within the same States. The fire unit at Missoula will be terminated without being merged with another unit. No location closures will result from these terminations.

The zero net change in FTEs will result from eliminating about 50 positions associated with research reduced or terminated and the creation of about 50 new positions in the global change and catastrophic fire priority research programs.

Object class Information

Travel	-58
Rent, communications, and utilities	-31
Printing and reproduction	-95
Supplies, materials, and equipment	-51
Grants, subsidies, and contributions	-143
Total	-378

Resource Analysis Research

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Resource analysis research	$	25,617	26,635	26,262	27,496	25,582	-1,914
	FTE	475	495	495	495	483	-12

Objective

To provide comprehensive, continuing inventory information on the forest land resources of the United State. To determine the effects of economic and institutional forces on domestic and international forest products markets and on forest management strategies. To develop improved methods for managing outdoor recreation and wilderness resources, including forests in and near urban areas.

Program description

Resource analysis research provides a scientific basis for assessing the current condition and outlook for forest land resources, forest product investments and markets, and outdoor recreation opportunities. It also provides methods for improving recreation services. The three major components of this research are summarized as follows:

Forest inventory and analysis

- Monitor trends in the extent, condition, and ownership of forest resources, including timber and wildlife habitat, through periodic inventories. Develop more cost-efficient techniques in forest inventory and data analysis.
- Analyze harvest and use of timber by the forest products industry and relate present and prospective consumption of wood products to timber supply.

Current information on forest conditions and timber supplies is critical to Federal and State policymakers, financial consultants, forest industry, and other landowners to support planning, management, and investment decisions.

Forestry investments and markets research

- Analyze the responses of domestic and international forest product markets and wood consumption to economic, technological, and institutional forces.

- Determine the effects of economic, institutional, and social factors on forest management decisions.

- Identify economically efficient management practices and strategies that will improve timber productivity while maintaining environmental quality.

- Evaluate the economic efficiency of multiple use management strategies and actions on public and private lands.

These activities help public and private policymakers develop strategies to increase the international competitiveness and economic contribution to society of the Nation's forest products industry. They help forest managers design public and private forestry programs that will enhance the productive potential of the Nation's forest resources. Individual landowners and firms that process forest products also use the results of this research to manage their resources more efficiently.

Outdoor recreation research

- Determine factors that influence recreation supply, demand, preferences, and benefits.

- Develop techniques to provide high quality recreation experiences and facilities while preserving natural environments.

- Determine new methods to improve user services, enhance educational opportunities, reduce vandalism, and resolve conflicts among recreation users.

- Evaluate benefits produced by urban forests.

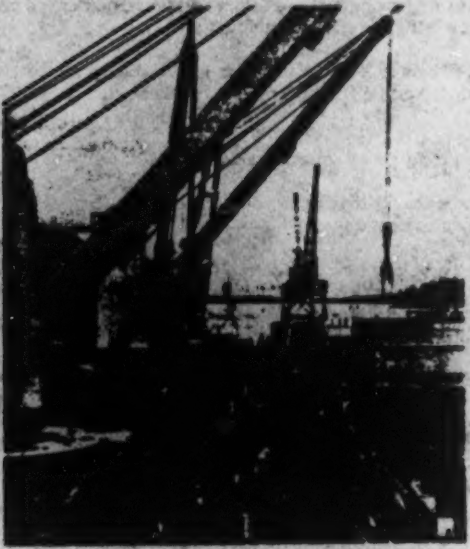
- Develop new techniques for managing urban forest resources to improve urban environments.

Recreation research develops new technology to enhance, manage, and protect scarce outdoor recreation resources for future use; to protect and maintain urban forest vegetation; and to maximize the many benefits that these urban forests produce.

Examples of Recent Research Findings

- International Trade in Timber and Wood Products. The United States is both a major exporter and importer of wood-based products. World shipments of forest products have increased over the past several decades, and trade patterns are dynamic. If we are to expand our share of the export trade, it is critical that we identify emerging trends, constraints, and opportunities to increase our wood products exports.

For over 10 years, Forest Service research economists have been evaluating world trade in timber products, with particular emphasis on opportunities to increase exports and foreign trade trends that may influence the adequacy of future domestic timber supplies. Research findings on U.S. international trade in forest products are used by government and private industry planners. This reseach also serves as a primary source of the information needed to resolve public policy issues related to timber and wood products trade. In 1989, experts from the Forest Products laboratory and their Canadian Counterparts helped resolve a long standing disagreement on softwood plywood grades and standards that hindered implementation of a free trade agreement. Also researchers from the Northeastern Station identified serious flaws in Department of Commerce data on exports of hardwood products. Analysts are now using revised data to reevaluate the effects of exports on the domestic hardwood timber supply. Pacific Northwest Station researchers analyzed the impact on regional timber supplies by changing the current restriction banning export of logs from public lands.



Forest Service, Resources Analysis Research, monitors trade in timber products, including softwood log exports.

- Forest Resource Data: Expanded Service in an Electronic Environment. Because four Forest Service Experiment Stations have regional responsibility for conducting inventories of different forest types in the eastern United States, resource analysts in the past have worked with four different data formats for forest resource information. The difficulty of combining these inventories has often prevented valuable forest resource data from being fully used. Researchers from the four eastern Experiment Stations have now developed a standard electronic format and coding system to deliver forest inventory data to resource analysts. Investigators will be able to easily compute estimates of forest resource characteristics for any selection of states, counties, or other geographic areas.

- Tree Growth and Atmospheric Deposition in Pennsylvania. There is general public concern that the health of the Nation's forests, particularly those of the Northeast, may be declining because of atmospheric pollutants broadly termed "acid rain." Using an extensive atmospheric deposition monitoring system supported by the Commonwealth of Pennsylvania and remeasurements of permanent forest survey plots maintained by the Northeastern Station's Forest Inventory and Analysis Unit, researchers analyzed forest and tree growth across a well defined gradient of acidic precipitation. They also took into account other natural influences on forest growth, including drought and insect defoliation. The study found a significant reduction in growth rate for only three tree species, two of which have been severely impacted by gypsy moth defoliation in the last decade. In addition to indicating that Pennsylvania's forests are not suffering a major decline attributable to atmospheric pollution, this research demonstrates the usefulness of the continuous forest inventory as a source of well documented, historic forest measurements that can be combined on a regionwide basis with other environmental data to provide answers to current issues on forest health.

- The Urban Forest Reduces Energy Costs and CO2 Emissions. Summertime temperatures in cities are 5-7 degrees F higher than the countryside. Each year, this extra heat costs Americans billions of dollars to pay for the excess air conditioning bills. Moreover, the carbon dioxide from generating this additional air conditioning energy will burden generations to come with problems of climate change. Energy consumption and carbon dioxide emissions can be significantly reduced in residential areas if the right trees are placed in the right locations near homes. Doing this nationwide has the potential of reducing summer cooling costs by 50% and winter heating costs by 15%.

Researchers built computer simulations that projected annual energy use in residences for a variety of tree species and placements around buildings. Planting, maintenance and water costs were found to be small compared to the overall energy savings and contributions to an improved environment. The added trees further cool the urban environment as they transpire (evaporate) water from their leaves. Finally, as the trees grow they take in and sequester carbon dioxide from the atmosphere. Projections of tree planting for urban areas over the U.S. indicate annual energy savings of $2-4 billion in addition to reducing the amount of carbon dioxide contributed by the U.S. to the atmosphere each year.

- National Measures of Forest Productivity for Timber. Measures of productivity are important in characterizing the performance of the U.S. economy. Productivity indexes for the U.S. farm sector have been published for decades by the USDA, yet no national productivity indexes have been reported for the forest resources of the United States. Economists at U.S. Department of Agriculture's Office of Budget and Program Analysis, the Forest Products Laboratory, and the Forest Service Washington Office developed national measures of forest productivity for timber. These productivity measures reflect the performance of forests as measured by annual timber growth and harvest yields in relation to the timber inventory and timberland area. They provide a concise and comprehensive view of the overall timber productivity in the United States for the past 35 years.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Resource analysis research..................$	27,496	25,582	-1,914
FTE	495	483	-12

A decrease of $1,914,000 is proposed from the 1991 base.

FY 1991 Emphasis

This funding level permits continued research to maintain inventories of forest resources nationwide, research to enhance the competitiveness of the U. S. forest products industry, and research to support forest recreation programs in high use wildland and wilderness areas. It also includes $100,000 for the research challenge cost-share program.

- Forest Inventory and Analysis. This program provides nationwide resource inventories including data collection, compilation, and analysis. Research is focused on the development and application of new technologies for improving the efficiency of the nationwide forest inventory. It provides for an average nationwide 13 year inventory cycle as compared to our long term goal of a 10 year inventory cycle which is consistent with increasing demands for detailed information about the status and health of the Nation's forests.

- Competitiveness of the U. S. Forest Products Industry. This research is providing improved understanding of current investment opportunities in U. S. forest land, technology, and recycling of forest products. Application of increased knowledge in these areas could make United States timber and wood processors more competitive in world markets and offset imports of newsprint from Canada, thereby reducing the chronic balance of trade deficit in timber products. Development of ways to assess future timber supplies, application of high technology to solid wood processing, and assessment of the mplications of pulp, paper, and recycling technology for wood use are of particular interest at this time.

- Recreation in High Use Wild lands and Wilderness Areas. Research in high use wildland recreation areas is being directed at resolving visitor management problems. Emphasis is on studying cultural group behavior differences and methods to increase customer satisfaction. Methods to improve communication among managers and user groups are also being explored. For wilderness areas, there is a need to better understand the impacts of visitor use on wilderness environments, and the significance of wilderness education and how it affects visitor behavior. Research is also developing methods to assist managers in determining how to use all types of wilderness sites appropriately and how to effectively manage them in an unobtrusive way.

FY 1991 Impacts

- Extend the current interval between inventories, now 10 - 12 years in the South and 15-17 years elsewhere in the Nation (AK, CO, MN, MS, NC, OR, PA, UT).

Eliminate research on remote sensing applications for forest inventory (MS).

Reduce research on:

- The impacts of international trade of forest products (OR).
- High use wild lands and urban forestry (IL).
- Economics of natural resources planning and use, especially for recreation, wildlife, and fisheries (CO).
- Research evaluation analysis (MN).
- Wood use in residential construction and residential upkeep and repair (WI).

The shifts in research priorities will lead to a net reduction of 12 FTE's for resource analysis research, compared to the FY 1991 base. This net reduction results from a decrease of approximately 30 positions in forest inventory and analysis (largely temporary full-time employees assigned to field crews), and renewable resources economics research and the reassignment of 18 positions to higher priority work associated with the priority research programs, such as forest health monitoring for global change effects.

Object class information

Salaries and benefits	-432
Travel	-72
Rent, communications, and utilities	-123
Other services	-720
Supplies, materials, and equipment	-238
Grants, subsidies, and contributions	-329
Total	-1,914

Timber Management Research

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
	(Dollars in thousands)					
Timber management research..........$	28,973	29,794	29,388	30,782	30,000	-782
FTE	483	491	491	491	490	-1

Objective

To increase the productivity and multiple use benefits of forest lands. To maximize the growth and quality of trees To maintain healthy forests.

Program description

The timber management research program is directed toward achieving higher productivity from forest lands by developing economically, biologically, and environmentally sound forest management practices. The program focuses on: the development of cost effective and reliable silvicultural techniques to improve forest growth, quality, and composition; on genetic improvement for superior tree growth, quality, and resistance to forest pests; and on more accurate predictions of the growth and yield of forest stands. This program also focuses on development of techniques to promote timber production and nontimber benefits such as wildlife habitat, watershed values, recreation opportunities, and biological diversity.

Basic research is directed at understanding the physical, biological, and genetic factors that control the development of individual trees, forest stands, and natural ecosystems and landscapes.

Timber management research ensures that the information and technology needed to achieve full and sustainable productivity are developed and promptly made available.

Examples of Recent Research Findings

- Managing Eastern Hardwood Forests. The eastern hardwood forest offers tremendous potential for a variety of resource benefits. However, improved management techniques are needed that protect and enhance water quality, wildlife habitat and diversity, recreation suitability and timber productivity. Forest Service research brought together and evaluated previous knowledge and developed new information on hardwood species, silvicultural techniques, forest health and diversity, and economic methods to make good management more feasible. Results are aimed at private and public sector forest managers, those working with high or medium value species, and scientists who will conduct future research. This information is contained in a comprehensive report entitled Central Hardwood Notes; one of many recent publications aimed at improving hardwood management.

- Design and Application of Forestry Alternatives at Stand and Landscape Scales. Public controversy concerning management of old growth forests and spotted owl habitat in the Pacific Northwest has focused on a clearcut vs. preservation dichotomy. Future management of millions of acres of Forest Service land in the west is in question as a result of associated litigation, appeals, and potential legislation. Research results and new perspectives gained from ecosystem studies at the H. J. Andrews Experimental Forest (Willamette National Forest) offer approaches to managing forest stands and landscapes that may maintain ecological values while commodites are produced. Research has focused on ecological roles of coarse woody debris, effects of alternative cutting patterns on wildlife habitat, and linkages between forests and streams. Research and managers, working as a team at the Andrews Experimental Forest have transferred findings to many National Forests and other land management organizations. This approach to managing forest and stream ecosystems offers an array of environmentally/sensitive management options.

- Tropical Forest Management. The tropical forests, including wet, dry and highland forests, offer vital resources to the people of tropical nations and are no less vital to the rest of the world. But destructive use of these forests is causing hardship for local people who depend directly on them, as well as widespread global problems. Sustainable, non-destructive tropical forest management techniques are needed to maximize benefits. In response to this need, research carried out by the Southern Station in Puerto Rico and the Pacific Southwest Station in Hawaii is contributing to better forest management in tropical regions around the world. Specifically, research on biodiversity, watershed, wildlife, ecosystem management, wood production and agroforestry is providing new, attractive options for land use in tropical forest areas. Donor agencies, forest managers, financial institutions, the private sector and governments throughout the tropics look to work done at these units to resolve specific land use problems.

Restoration of degraded ecosystems is an important component of Forest Service research, in both temperate and tropical forests. This 8-year old stand of Eucalyptus has given renewed vigor to degraded, abandoned farmland in Puerto Rico. Shifting agriculture in developing countries each year produces more and more land in need of treatment for restoration of productivity.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Timber management research		$ 30,752	30,000	-752
	FTE	491	490	-1

A decrease of $752,000 is proposed from the 1991 base.

FY 1991 Emphasis
This funding level permits continued emphasis on high priority research programs, such as the application of biotechnology to the genetic improvement of forest trees and the development of silvicultural guidelines to maintain and improve forest productivity. Also included in this amount is $100,000 for the research challenge cost-share program.

- Genetic Improvement through Biotechnology. The Forest Service is using biotechnology in its genetics research program to help overcome tree improvement problems associated with regeneration time and size of trees. Current research is focused on the development of trees better able to cope with drought and cold stress, trees tolerant to herbicides used to control competing vegetation, and trees resistant to certain forest pests. In addition, research in forest genetics continues to provide technology for traditional tree improvement programs.

- Developing an Ecological Perspective for Managing Forests. The Forest Service is being challenged to manage not just for traditional products such as timber, water, game animals and fish, and recreation, but also for complex ecological values and issues of global concern. These include both the maintenance of natural ecosystems and also their enrichment in terms of species, size, and relative numbers. Particular emphasis needs to be given to areas such as biological diversity, the relationships between stand structure and ecological processes, sustained forest ecosystem productivity, and forest health. The goal of this research is to provide the technology and fundamental information needed to integrate the uses of all forest resources while maintaining and enhancing ecological values such as biological diversity and sustained productivity. Current and proposed research encompasses a wide range of levels from the management of individual organisms and forest stands to a larger landscape perspective.

FY 1991 Impacts

Initiate research on:

- Fundamental effects of carbon dioxide and ozone on tree physiological processes (WI)
- Effects of global change on inputs, outputs and mediating processes of carbon, water and nutrients in subalpine forest ecosystems (CO).
- Response of sensitive ecosystems to climatic warming related to atmospheric pollutants (WA & OR).
- Technology for long term ecosystem monitoring (OR).
- Long term forest productivity and health (OR).
- Alternative silvicultural systems for multi-resource management (CA).
- Effects of climate change on biological diversity (WI).
- Vegetation management techniques for forest regeneration, wildlife habitat and other values (AR).
- Effects of climate change on biodiversity and ecological integrity of maximally sensitive ecosystems (CO).

- Soil-water-environmental interactions, including fate of pesticides, alternatives to chemicals, and soil site productivity (AL).
- Influence of climate change on artificial regeneration and growth of high quality central hardwoods (IL).

- Influence of climate change on natural regeneration and production of central hardwood forests (MO).

Accelerate research on:

- Management of forested wetlands to minimize impact of forestry operations on environmental conditions (SC).

- Impact of climate change on growth and yield prediction (ID).

- multifunctional biotechnology control of tree damaging agents (WI).

- Effects of intensive forest management of forest productivity, water quality/quantity and pest problems in southern forests (FL).

- Adaptive ecology of conifers related to climate change (ID).

- Impacts of a changing environment on forest stand structure and composition including genetic controls (LA).

Reduce research on:

- Growth and yield research (ID and CA).

- Biology and silviculture of Douglas-fir (WA).

- Forest tree seed problems nationwide and internationally (MS).

Terminate research on:

- Regeneration and pest control in subalpine conifers (terminate unit at Bozeman, MT and close location)

- Drought resistance of western conifers (AZ).

- Ecological community and habitat requirements of wildlife species (CA).

- Succession ecology of Rocky Mountain Douglas-fir and ponderosa pine (terminate the unit at Boise, ID).

- Natural forest and plantation silviculture on tropical forests outside of Puerto Rico (PR).

These shifts in the timber management research program will result in 6 research work unit closures; 4 by merger (Corvallis, OR; Olmpia, WA; Bozeman, MT; and Orono, ME) and 2 without merger (Honolulu, HI; and Boise, ID). The net decrease of 1 FTE is the result of major shifts in research emphasis. About 45 FTEs are associated with the research reduced or terminated. About 44 of those FTEs will be reassigned to work initiated or accelerated that is associated with the six priority research programs for FY 1991.

Object class information

Salaries and benefits	-71
Travel	-47
Rent, communications, and utilities	-124
Other services	-237
Supplies, materials, and equipment	-157
Grants, subsidies, and contributions	-116
Total	-752

Forest Environment Research

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
		(Dollars in thousands)					
Forest environment research....................................	$	31,100	34,144	33,678	35,247	36,568	+1,321
	FTE	524	583	583	583	604	+31

Objective To provide the knowledge and technology needed to manage, enhance and protect forest and range nontimber resource values. Most notable are wildlife and fish habitats, water quality and quantity, and forage productivity.

Program description Research emphasis areas include critical relationships among timber, water, forage, wildlife, and fish; integrated management of riparian ecosystems; anadromous and resident fish habitats; cumulative watershed effects; effects of atmospheric deposition; effects of climate change; disturbed site rehabilitation; wildlife dependent on old growth forests (including the spotted owl); threatened, endangered, and sensitive plant and animal species; improved varieties of range plants; integrated management of forest and rangeland watersheds; and principles of biological diversity.

The forest environment research program:

- Develops methods to maintain or improve water quality and yield from forests and rangelands;
- Develops management guidelines for wildlife and fish species, including threatened, endangered, and sensitive species;
- Evaluates the cumulative effects of land management activities on water quality, water and sediment yield, stream channel stability, and fish habitat;
- Determines the effects of chemicals, including atmospheric deposition, on forests and rangelands;
- Evaluates the effects of climate change on forest and range land ecosystems;

- Develops new technology to plan mining operations that protect surface and underground water supplies and restore long term productivity of mined lands;

- Develops new concepts and methods for cost effective monitoring of wildlife populations;

- Provides knowledge of ecological principles that apply to the planning and management of watershed, range, fish, and wildlife habitat programs;

- Develops effective techniques to manage livestock, to maintain or enhance site productivity, and to control undesirable vegetation;

- Develops new plant materials and techniques to stabilize eroding soils;

- Determines ways to conserve snow moisture to improve vegetative growth and surface water supplies; and

- Provides information to meet legal and regulatory requirements.

Examples of Recent Research Findings

Preserving red-cockaded woodpeckers. The future of the red-cockaded woodpecker, an endangered species, depends largely on whether its habitat needs can be met on National Forests and other public lands in the South. Habitat on private lands is rapidly decreasing as many of the remaining old southern pines are harvested, reducing the number of suitable nest sites for the woodpecker. A set of habitat management guidelines have been developed by Southeastern Station scientists in cooperation with the U.S. Fish and Wildlife Service that will increase the amount of suitable nesting and foraging habitat, and reduce the levels of predation and competition by suppressing midstory trees. Where these habitat provisions have been rigorously applied, red-cockaded woodpecker populations have stabilised or increased. The population on the Francis Marion National Forest in South Carolina was one of three populations considered to be secure and viable. Then on September 22, 1989, Hurricane Hugo destroyed much of the red-cockaded habitat that had been so carefully preserved and improved over the past 10 years. The hurricane's 135-mile-per-hour winds destroyed a majority of the cavity trees on the Francis Marion National Forest. Biologists from the Southeastern Station, the Fish and Wildlife Service, and the National Forest System have developed emergency measures to stabilize and restore this woodpecker population. After the hurricane, homeless woodpeckers were still observed in areas where cavity trees had been destroyed. Because red-cockaded woodpeckers normally take a year or more to excavate a cavity, artifical cavities were created with power tools in the few pines still standing. Over a third of the artifical cavities that have been created are presently being used. Hurricane Hugo reminds us just how vulnerable an endangered species is, and emphasizes the need for knowledge enabling managers to react quickly when an unexpected natural disaster occurs.

Evacation of cavities with power tools was an emergency measure undertaken to provide shelter for homeless woodpeckers afer Hurricane Hugo. This was the first operational use of the cavity creation techniques pioneered by Forest Service

The value of increased streamflow in the Colorado River Basin.

Timber harvest can significantly increase streamflow leaving the forest. The value of additinal streamflow is a function not only of what it is worth once it is delivered to users, but also of our ability to deliver that water. To study the effect of flow increases on water use, the Rocky Mountain Station developed a model to simulate water flow, storage, and allocation, plus salinity and hyroelectric energy production in the Colorado River basin. To estimate the total value of the additional water, value estimates were assigned to predict changes in water allocation, salinity, and energy production that could result from timber harvest. Results show the delivery of streamflow increases to users is very sensitive to timing of the increase and mangement of water allocation facilities. Under existing conditions in the Colorado River basin, less than 25 percent of streamflow increases from timber harvest would be delivered to farms and cities. The rest would evaporate in reservoirs or flow on to Mexico and the Gulf of California.

Hydroelectric energy production accounts for slightly over half of the economic value of runoff increases, while waste quality improvements contributed about 25 percent, and use by farms and cities contributes the remainder. The value is expected to increase as population growth in the basin continues, but delivery of the increases to farms and cities will probably never constitute more than half the benefit value.

Guidebook for lake states wildlife watchers. Wildlife and their habitats are of great interest to a broad segment of society. People generally understand that wildlife needs habitat, but they don't appreciate the complexity of relations between wildlife and their habitat. In particular, they don't fully appreciate that each wildlife species has specific habitat requirements and that each kind of habitat supports a different wildlife community. To address this lack of understanding, the Forest Service and the Lake States Interpretive Association developed "Northwoods Wildlife: A Watcher's Guide to Habitats", a guidebook to 18 habitats found in the northwoods of MN, WI, and MI. A reader can visit any northwoods of MN, WI, and MI. A reader can visit any northwoods site in the Lake States and identify the type of habitat. The guidebook describes how the habitat originated, how it changes over time, and why it attracts a specific wildlife community. It also tells what wildlife species the reader is likely to encounter in a particular habitat, where to look for them, what they are likely to be doing and why, and provides illustrations of the habitat and associated species.

Recovery of subalpine forest in Hawaii, habitat of the endangered palila bird. Palila bird, a Hawaiian honeycreeper, is endangered because feral and mouflon sheep prevent natural reproduction of the mamane tree, a key element of the palila's habitat. In 1981, feral sheep populations were drastically reduced throughout the bird's critical habitat on Mauna Kea, Hawaii by the State of Hawaii. The assumption was that removing sheep would protect existing habitat, and would allow mamane and other native forest vegetation to regenerate naturally, thereby leading to an increase in palila carrying capacity. Five years after feral sheep removal, Forest Service researchers found that native plants were reoccupying severly degraded portions of the palila's critical habitat. Highly palatable and easily damaged native species, such as the mamane tree, benefited most from sheep control. Tree growth models, however, suggest that the palila may not measurably benefit from these new stands of mamane until well into the 21st century when the new trees will be producing greater quantities of seed, the principal food of the palila.

Spotted owl update. Maintaining viable populations of spotted owls on National Forests in the western states depends on accurate knowledge of suitable habitat for the birds. In the Pacific Northwest, the northern spotted owl finds suitable habitat in relatively large stands of mature or old growth Douglas-fir and fir-hemlock forests. In the Sierra Nevada of California, however, such habitats do not exist. Here, the California spotted owl finds suitable breeding habitats in a variety of situations, from the mixed conifer forests at higher elevations to foothill woodlands at lower elevations. In 1989, researchers found the California spotted owl breeding in mixed hardwood woodlands at elevations of about 1000 to 2500 feet in the southern Sierra Nevada. These foothill forests of blue oak, interior live oak, and sycamore ae the yearround home for several breeding pairs of spotted owls . In 1989, the density of spotted owls in the foothill woodlands was about equal to that found in the mixed conifer forests. Preliminary indications are that the forest habitats between the mixed conifer and foothill woodlands in the southern Sierrra Nevada are probably also used by spotted owls. If we determine that this habitat use pattern is typical of the entire western slope of the Sierra Nevada, it would mean a substantial increase in our estimate of the number of California spotted owls, and would improve our estimates of viability for spotted owls in this mountain range.

Recommended riparian gazing practices. Riparian areas occur where upland and acquatic ecosystems meet. The productivity and many uses of riparian areas are far in excess of their proportional acreage in western landscapes. Excessive livestock impacts, through heavy grazing and trampling, can affect riparian stream habitats by reducing or eliminating riparian vegetation, changing streambank and channel morphology, increasing stream sediment transport, and—as a cumulative result—lowering surrounding water tables. The Intermountain Station has developed riparian grazing recommendations that suggest managers maintain woody plant communities and streambank structure as well as herbaceous forage plants. A minimum height of herbage stubble and/or regrowth should be present on all streamside areas at the end of the grazing season to maintain plant vigor, protect streambanks, and help trap sediments.

New erosion prediction technology. Current erosion prediction is based on the Universal Soil Loss Equation (USLE) which was developed 40 years ago for cropland environements. It has been applied to other conditions, such as range or forest lands, with only limited success. Computer technology and subsequent research on erosion processes have made the USLE obsolete. A USDA/USDI interagency research and development program called the Water Erosion Prediction Project (WEPP), begun in 1987, will provide a new generation of erosion prediction models. These models do a better job of predicting erosion in a wider variety of environments because they are based on more complete descriptions of erosion processes. Also there will be model formulations designed to cover wider array of solutions to erosion problems. The first generation WEPP model has been released for testing and limited application. The new technology signficantly improves versatility and dependability of erosion prediction for many land management applications. Planning range management practices to minimize erosion, thus retaining land productivity, and designing forest roads and road construction practices to prevent sediment delivery to streams are only two examples of benefits expected.

Atmospheric deposition effects on Acquatic resources. Atmospheric deposition of pollutant sulfer and nitrogen compounds potentially can cause mobilization and transport of nutrients and heavy metals in ground and surface waters where they affect aquatic habitat. Processes responsible for cycling and transporting atmospherically deposited chemical in ground waters have been identified. Our understanding of these processes has been incorporated in watershed models that predict effects of sustained atmospheric deposition. Research results are being used to formulate the final report of the National Acidic Precipitation Assessment Program and to develop land management techniques that will help maintain forest ecosystem health.

Methane from peatlands contribute to greenhouse warming. The gases in the earth's atmosphere that contribute most to greenhouse warming are water vapor, carbon dioxide, and methane. Methane concentrations are increasing at 1 percent a year compared to only 0.4 percent per year for carbon dioxide. Moreover, methane is 20 times more effective at trapping heat than carbon dioxide, so it is becoming more and more important in regulating earth's temperature. Peatlands and other waterlogged soils are a major source of methane. NASA and the Forest Service cooperated in a study that measured the loss of methane from several peatland types in northern Minnesota. Summertime measurements were combined with long term environmental data to estimate that 198 billion pounds of methane are produced from peatlands in the northern hemisphere each year. That amount can trap as much as one-fourth of the carbon dioxide resulting from the burning of fossil fuels each year.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Forest environment research.	$	35,247	36,568	+1,321
	FTE	583	604	+21

An increase of $1,321,000 is proposed from the 1991 base.

FY 1991 Emphasis

This funding level permits a shift in emphasis in Forest Environment Research to increase research that supports the following priority research programs—global climate change, water quality, and threatened, endangered, and sensitive plant and animal species. These priority research areas include various aspects of our watershed, wildlife, range, and fish habitat research programs as described below. Also included in this amount is $100,000 for the research challenge cost-share program.

- Water Quality. Forest and rangeland management practices that threaten to degrade water supplies must be identified and mitigating practices applied. Safe alternative practices must be developed. The planned research will: (1) lead to refinement of our understanding of the hydrologic cycle and improved prediction capabilities; (2) define how land uses affect the rates of sediment production and transport, and how these changes impact water supplies, reservoirs, riparian areas (including vegetation changes); (3) assess the mobility and fate of toxic chemicals in forest and rangeland environments; and (4) develop the knowledge needed for maintaining high quality fish habitat in the streams and lakes of the national forests.

- Threatened, Endangered, and Sensitive Plant and Animal Species. Efforts to protect and recover threatened, endangered, and sensitive (TES) species on forest and rangelands require a sound scientific basis for management activities and decisions. Forest Service research will provide the knowledge and techniques needed to protect and recover TES species. A major portion of the priority research project is designed to study old-growth wildlife species including TES species such as spotted owl and red-cockaded woodpecker. Studies will continue on TES fish in the Southwest, the Puerto Rican parrot, grizzly bear, Kirtland's warbler, and Eastern timber wolf. Our TES plant research will increase; work will be initiated in the Southeast. This research program will complement efforts to conserve biological diversity by helping to curb the loss of species.

- Global Change. Research programs on the effects of global change (GC) on valuable Southeast and Pacific Northwest coastal and interior forested ecosystems will increase. Research will increase on the particularly sensitive ecosystems in the arctic, tiaga, and the Rocky Mountain alpine zone where the most change is expected. A Northeastern GC data base/information center will be developed. Ecosystem research on GC induced insect and disease outbreaks in the Southeast and on TES response to GC in the north central area will increase. Individual tree models will be developed into stand level models needed for evaluating GC effects.

FY 1991 Impacts

Initiate research on:

- Threatened, endangered, and sensitive plants in the South (SC).
- Response of TES species to forest management and global change in the Lake States (WI)
- Role of biological diversity of plant and animal species in old growth forests of northern California (CA).

- Developing a global change Eastern Region Data Base/Info. Center (WV).

- Global change effects on alpine forest in the Rocky Mountains (CO).

- Long term site productivity in Pacific Northwest (OR).

- Major program on regional water quality (WV, NH, PA, KY).

Accelerate research on:

- Spotted owls (OR, WA, CA).

- Stand levels models for evaluating global change effects (CO).

- Global change effects on the taiga forests (AL).

- Global change effects on forest stand structure and composition (NC, WA, OR).

- Land management activities on fish habitat (WY, CA, MN, ID, VA, WA, MS).

- Intensive forest management on water quality in southern forest (FL, NC).

Restore research on:

- Water resources and timber management interactions (MS).

Reduce research on:

- Restoration of severely disturbed lands in the West (UT,NM).

- Acid rain in the mid-Atlantic states (PA).

- Ecology of evergreen oaks in the Southwest (CA).

- Wind-transported snow in the Central Rocky Mountains (WY).

- The interactions of grazing and timber management on transitory range (OR)

- Hydrology (HI, CO, AZ)

- Wildlife habitat relationships in the northern Great Plains and the Central Rocky Mountains (SD, WY)

- Erosion control practices for enhancing fisheries (ID)

- Sitka deer habitat in Alaska (AK)

- Monitoring trends in bird and deer populations in the Sierra (CA)

Terminate research on:

- Meteorology and hydrology of urban watersheds in the mid-Atlantic states (terminate unit at University Park, PA; and close location)

- Restoration of severely disturbed lands in the East (terminate unit at Berea, KY, and close location)

- Acid rain effects on aquatic ecology in Mississippi region (MS)

- Range management in the South (terminate unit at Pineville, LA)

- Grazing impacts on riparian plants in the Sierra (CA)

- Non-TES, nongame wildlife in northeastern Oregon (OR)

- Wildlife habitat relationships in the Northeast (terminate unit at

The net addition of 21 FTEs reflects the addition of 42 positions associated with new work on priority research programs and the elimination of 21 positions associated with reserach reduced or terminated.

Object class information

Salaries and benefits	+749
Other services	+447
Supplies, materials, and equipment	+125
Total	+1,321

Forest Products and Harvesting Research

	1990 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)			
Forest products and harvesting research..............$	30,497	31,718	31,423	32,417	30,878	-1,539
FTE	348	362	362	362	353	-9

Objective

To assure adequate supplies of needed forest products. To improve the competitiveness of U.S. forest product firms in domestic and international markets. To help sustain forest products employment in rural areas. To develop basic information leading to new wood based products or processes. To improve the performance and increase the value of wood products. To develop timber harvesting and transporting systems that are efficient, economical, environmentally acceptable, and integrated with other forest management operations. To reduce waste, costs and energy consumption, and promote recycling when manufacturing wood products.

Program description

Utilization research leads to improved technology for producing economical, high performance, and energy efficient wood based structural components, wood fiber composite materials, pulp, paper, chemicals, and fuels. This research also develops mechanical, chemical, and biological treatments to enhance the service life, durability and fire safety of wood products. Processing systems utilizing computerization, automation, robotics, and biotechnology are developed to reduce costs, waste, pollution, and energy consumption in manufacturing wood and pulp products.

Basic and applied research combine to increase the level of product recovery from each harvested tree and to provide data needed for the engineering of specific products to match higher value uses. Paramount to this research is determining the performance of products from the changing timber resource base.

Harvesting research emphasizes improving systems for harvesting forest biomass efficiently, economically, and in environmentally acceptable ways. Regionally oriented programs develop data needed to improve cable and other logging systems, which can economically harvest trees and logging residues from steep terrain and reduce the need to build forest roads on unstable slopes.

Research also focuses on small, mobile systems, both cable and land based, to harvest low grade hardwood trees, logging residues, small types, and plantation grown trees. A primary target is the complete integration of harvesting operations with requirements for site preparation, replanting, and other forest management operations.

Examples of Recent Research Findings

Timber Harvesting Systems That Protect The Environment. Protecting the environment through design and operation of timber harvesting systems is a national and international challenge. Harvesting research provides forest management practices that assure the regeneration and productivity of future forests. Harvesting decisions affect many resource values, such as wildlife habitat, watersheds, biodiversity, and esthetics. Therefore, to protect environmental and esthetic values and to promote renewal of the forest, contemporary logging operations must be carefully planned and must use modern harvesting technologies.

Forest Service harvesting research units have developed, evaluated, and helped implement technologies designed to remove timber economically and efficiently with the least amount of disturbance to the residual stand and forest environment. These technologies include computer programs for harvest planning that predetermine the location of towers, cableways, skid trails and roads. Harvesting research has also shown that impacts on forest ecosystems can be minimized by using modern technologies, such as skyline logging systems, continuous cable systems, semi-walking machines, vehicles with wide and low pressure tires, track laying vehicles, and innovative balloon and helicopter systems to transport logs.

The joint research results from these harvesting research units provide a comprehensive body of knowledge enabling efficient timber removal while protecting the environment and promoting rapid recovery of the forest cover.

Skycrane helicoper removing inch withdrawn timber on the Bull Run watershed near Portland, Oregon

Timber Bridges for Rural America. Nearly 75 percent of the Nation's 650,000 bridges are on rural and secondary roads. Half of these are either structurally or functionally deficient. Timber bridges are an economical option when these bridges need replacement. Recent research focus has been to develop bridge designs that utilize more locally grown hardwood and softwood species.

Timber bridge design and performance research has been underway in the Forest Service for over 20 years. Results were available to prepare a comprehensive Timber Bridge Design Manual to support a nationwide Forest Service technology transfer program. The manual addresses types of bridges, designs, fabrication of components, construction, maintenance and rehabilitation.

The manual will be updated with soon to be available new technology in the areas of efficient structural grading of hardwood lumber; improved treatability of hardwoods; new design criteria for innovative and efficient bridge systems; and improved design criteria for existing bridge systems.

The Little Salmon Creek Bridge in Pennsylvania is the first all-hardwood treated timber bridge with longitudinally stress-laminated design, and is constructed in the Allegheny National Forest.

How to Design Effective Erosion Control Treatments for Forest Roads. Without effective erosion control treatments, forest road construction can have significant adverse impact upon water quality and fish habitat. The Intermountain Research Station has initiated a series of studies with a national data base to develop technology for planning forest access roads with minimal environmental impact. Research results from these studies and from published sources were evaluated and structured into a guide for designing erosion control treatments for road traffic surfaces, ditches, cutslopes, and fillslopes.

Tannin-Based End-Joint Adhesives Move from the Laboratory Bench to Mill Trials. One of the most promising uses of tannins from tree bark and nut shells is as a cold setting adhesive. This allows substitution of renewable tannins for more expensive phenolics for end-jointing of lumber.

Collaborative research made possible by the Technology Transfer Act of 1986 and USDA's Small Business Innovation Research Act of 1982 has resulted in full-scale mill trials of cold-setting tannin-based adhesives that had previously been developed on a laboratory scale. Latest results from a series of mill trials indicate that adhesive bonds equivalent to those obtained in laboratory-scale development can be achieved in mill-scale environments.

Choosing and Applying Fire Retardant Treated Wood in Roof Assemblies. Extensive degradation and loss of strength occur in some types of fire retardant treated plywood when used in high temperature applications such as roof decks. In some rather specific circumstances, the fire retardant is prematurely activated, causing the wood to become dark and brittle.

Research at the Forest Products Laboratory has achieved a major breakthrough in understanding the mechanisms of degradation and what factors influence the rate of degradation. The extent of degradation depends on the chemicals used and temperatures encountered. Preliminary guidelines for choosing and applying fire retardant treated wood to roof systems have been published. These guidelines should help architects and builders avoid degradation until further research provides more comprehensive guidelines for the selection and use of fire retardant treated structural wood products. A significant market exists for fire retardant treated plywood for roof sheathing. This research helps to maintain the market.

Biomechanical Pulping. Wood is pulped chemically, mechanicall, or by several combinations of the two process. The use of mechanical processes is growing rapidly because they give much higher yields, are less polluting, and require less capital to build the mills. Mechanical pulping, however, requires very large amount of electrical energy and the pulps produce much weaker papes than chemical pulps. Chemical treatments prior to mechanical pulping result in stronger papers, but they generate wastewaters which are difficult to treat and reduce the yield. A completely new approach, called biochemical pulping, is being explored at the Forest Products Laboratory (FPL) in Madison, Wisconsin.

In biomechanical pulping, wood is treated with selected wood decay fungi and then mechanically pulped. FPL scientists have demonstrated that biomechanical pulping results in large energy savings and substantial improvements in paper strength properties (often doubling or trebling burst, tear, and tensile strength). Biomechanical pulping also has environmental advantages compared to processes using chemical pretreatments.

Naval Stores—Production, Chemistry, and Utilization. Although extensive literature exists on the subject of naval stores chemistry, no comprehensive text provides an in-depth review of the field. Specific publications on wood chemical sources are not in a suitable format for problem solving.

To fill this gap, Forest Products Laboratory researchers led an effort to compile a new, detailed, and comprehensive handbook entitled "Naval Stores — Production, Chemistry, and Utilization". Authors from other government agencies, industry, and academia contributed several chapters in this authoritative treatise. It will be the basic reference in the field for scientists in naval stores research and development, engineers in naval stores process development and production, technical sales and marketing staffs, and users in naval stores product development for years to come.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Forest products and harvesting research.		$ 22,417	$ 20,878	$ -1,539
	FTE	362	353	-9

A decrease of $1,539,000 is proposed from the 1991 base.

FY 1991 Emphasis
At the proposed level of funding there will be continued emphasis on high priority areas of forest products and harvesting research. In addition, this level includes $100,000 for the research challenge cost-share program.

- Erosion control methods on forest roads. Forest roads are often a source of stream sedimentation which disturbs aquatic habitat. This research is directed toward designing and constructing cost effective forest roads that cause less stream sedimentation, and road maintenance programs that include mitigation methods for erosion control.

- Microbial and biochemical technology. This research determines microbial and biochemical interactions with wood, and applies these to improve processes related to pulping, papermaking, wood chemicals, and the protection of wood products from insects and decay.

- Automation of wood processing. This research is aimed at the development of high speed, efficient systems for converting logs into quality forest products through the introduction of advanced computerization and robotics technology for processing operations.

- Integration of harvesting, transportation, and forest management. This research is directed toward the engineering of efficient harvesting systems that are integrated into a comprehensive forest management approach that facilitates subsequent site preparation, revegetation, and silvicultural treatments.

- Modern engineering design of wood structures. This research strives to achieve the full potential of wood materials in structures through design concepts that recognize variability of wood materials, improve connection techniques, and consider strength of the assembly acting as a whole. Benefits of improved quality control during the manufacture of the structural components, and guidelines for choosing and applying fire retardant treated wood for engineered buildings are also a focus of this research.

- Wood adhesives and chemicals for industry. Research is directed toward utilizing the chemical components of wood (such as lignin, naval stores, cellulose, and xylose) as diverse sources of industrial raw materials to replace petroleum as a chemical feedstock for adhesives.

- Recycling of waste paper and wood. This research addresses a major national environmental problem by providing technology to convert waste paper and wood into useful products.

FY 1991 Impacts

Delay research to:

- Implement advanced engineering design concepts for wood construction essential for wood industry competitiveness (WI).

Reduce research on:

- Properties and performance of products from juvenile wood (WI, LA).

- Developing economical methods of harvesting and utilizing native timber from interior Alaska (AK).

- Developing timber bridge design and performance criteria to support modification of rural highway bridge codes (WI).

- Weathering and performance of finishes on wood products (WI).

- The effects of silvicultural treatments on quality of wood from second-growth stands to ease dependence old-growth timber (OR).

- Road engineering methods to minimize negative environmental effects of building in sensitive areas (ID).
- Adhesives from renewable resources that substitute for petroleum-based adhesives. (WI, LA) (terminate unit at Madison, WI).
- Biological-based wood pulping processes which conserve energy and reduce pollution (WI).
- Engineering design factors for long-duration loading of structural wood members used in buildings and bridges (terminate unit at Madison, WI)
- Corrugated containers designed to withstand exposure to repeated wet/dry humidity cycles (WI).
- Improving the efficiency of burning wood by use of gravel bed furnances that are less polluting and can reduce dependence on fossil fuels (WI).
- Charatertizing cellulose chemistry essential for manufacturing and marketing high quality paper in competitive world markets and for increasing the use of recycled paper (WI).

Terminate research on:

- Developing nondestructive test methods for detecting hidden decay in wood structural members without removing them from service (WI).
- Detecting "wetwood" bacterial infestations of freshly sawn lumber that result in serious degrade during drying (WI).
- Application of wood-based biotechnology to environmental cleanup of toxic waste (WI).

The net decrease of 9 FTEs results from a decrease of 24 FTEs on work reduced or terminated and an increase of 15 FTEs associated with work contributing to the six priority research programs, especially Enhancing Forest-Based Economies in Rural America.

Object class information

Salaries and benefits	-369
Travel	-73
Rents, communications, and utilities	-210
Other services	-321
Supplies, materials, and equipment	-345
Grants, Subsidies, and Contributions	-221
Total	-1,539

FOREST RESEARCH

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-1104-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Timber management research ..	26,181	30,951	30,000
	2. Forest products and harvesting research	31,395	22,611	20,878
	3. Forest protection research........	19,808	36,256	35,644
	4. Resource analysis research.......	24,415	27,659	25,582
	5. Forest environment research...	29,501	35,469	36,568
	6. Competitive grants....................	107	0	0
	Total direct program..........	131,407	152,946	148,672
	Reimbursable program	12,767	14,641	14,200
10.00	Total obligations................	144,174	167,587	162,872
	Financing:			
	Offsetting collections from:			
11.00	Federal funds...............................	-11,852	-13,608	-13,182
14.00	Non-Federal sources	-915	-1,051	-1,018
21.40	Unobligated balance available, start of year..............................	-290	-7,721	0
22.40	Unobligated balance tranferred, net.........	0	-50	0
24.40	Unobligated balance available, end of year..................................	7,721	0	0
25.00	Unobligated balance lapsing.......................	-571	0	0
27.00	Reduction pursuant to P.L. 99-177.........	0	18	0
39.00	Budget authority................	138,267	145,175	148,672
	Budget authority:			
40.00	Appropriation	137,867	147,182	148,672
40.00	Reduction pursuant to P.L. 99-177:	0	-2,007	0
42.00	Transferred from other accounts..............	400	0	0
43.00	Appropriation (adjusted)	138,267	145,175	148,672
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	131,407	152,928	148,672
72.40	Obligated balance, start of year...................	24,858	21,571	30,774
74.40	Obligated balance, end of year	-21,571	-30,774	-31,469
90.00	Outlays..	134,694	143,725	147,977

FOREST RESEARCH

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-1104-0-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	58,442	63,919	67,871
11.3	Other than full-time permanent	9,883	10,809	11,477
11.5	Other personnel compensation	362	396	420
11.8	Special personal services payments	1	1	0
11.9	Total personnel compensation	68,688	75,125	79,768
	Personnel benefits:			
12.1	Civilian	11,677	14,087	16,468
13.0	Benefits for former personnel	162	177	188
21.0	Travel and transportation of persons	5,842	6,241	4,753
22.0	Transportation of things	900	961	732
23.1	Rental payments to GSA	2,017	1,850	1,885
23.2	Rental payments to others	228	244	186
23.3	Communications, utilities, and miscellaneous charges	6,123	6,541	4,982
24.0	Printing and reproduction	890	951	724
25.0	Other services	22,603	24,147	18,390
26.0	Supplies and materials	5,842	6,242	4,754
31.0	Equipment	5,721	6,112	4,655
32.0	Land and structures	179	191	145
41.0	Grants, subsidies, and contributions	505	10,045	11,017
42.0	Insurance claims and indemnities	28	30	23
44.0	Refunds	2	2	2
99.0	Subtotal, direct obligations	131,407	152,946	148,672
99.0	Reimbursable obligations	12,767	14,641	14,200
99.9	Total obligations	144,174	167,587	162,872

PERSONNEL SUMMARY

	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	1,664	1,772	1,772
Total compensable workyears:			
Full-time equivalent employment	2,234	2,379	2,379
Full-time equivalent of overtime and holiday hours	12	12	12
Average ES salary	$75,500	$78,200	$97,800
Average GS grade	11.78	11.78	11.78
Average GS salary	$35,452	$36,409	$37,659
Average salary of ungraded positions	$24,666	$25,332	$26,201
Reimbursable:			
Total number of full-time permanent positions	85	90	90
Total compensable workyears:			
Full-time equivalent employment	114	121	120
Full-time equivalent of overtime and holiday hours	1	1	1
Average GS grade	12.76	12.76	12.76
Average GS salary	$42,183	$43,322	$44,809

Forest Service

State and Private Forestry

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec.(-) from 1990	Inc. (+) or Dec. (-) from Base
		(Dollars in thousands)						
Forest pest management	$	48,677	51,906	51,386	54,664	42,692	-8,694	-11,973
	FTE	445	456	456	456	441	-15	-15
Fire protection	$	13,851	14,400	14,228	14,838	4,011	-10,217	-10,827
	FTE	43	44	44	44	40	-4	-4
Forest management and utilization	$	10,265	19,300	18,971	18,794	10,914	-8,057	-7,880
	FTE	80	94	94	94	72	-22	-22
Special projects	$	12,875	19,900	19,663	7,214	0	-19,663	-7,214
	FTE	5	6	6	6	0	-6	-6
Total	$	86,668	105,506	104,248	95,510	56,617	-47,631	-38,893
	FTE	573	600	600	600	553	-47	-47

Authorities

P.L. 78-412, Department of Agriculture Organic Act of September 21, 1944 (7 U.S.C. 2250). Section 703.
Erect, alter, and repair buildings necessary to carry out authorized work.

P.L. 89-106, The Special Research Grants Act of August 4, 1965 (7 U.S.C. 2250a). Section 1.
Erect and lease buildings, structures, and land from non-Federal sources.
Such sums as appropriated, no expiration date specified.

P.L. 95-313, Cooperative Forestry Assistance Act of 1978, July 1, 1978 (16 U.S.C. 2101-2110). Sections 3 and 5-8.
Cooperation in forest management and urban and community forestry; insect and disease control; rural fire control; and management and planning assistance.
Such sums as appropriated; no expiration date specified.

P.L. 93-378, Forest and Rangeland Renewable Resources Planning Act, August 17, 1974, as amended (16 U.S.C. 1601). Sections 2-5.
Forest resources planning and evaluation.
Such sums as appropriated; no expiration date specified.

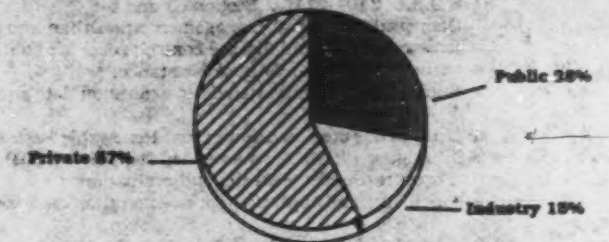
P.L. 95-192, Soil and Water Resources Conservation Act of 1977. (91 Stat. 1411).
Cooperation in soil and water resource appraisal and conservation.
Such sums as appropriated; no expiration date specified.

P.L. 96-586, Act of December 23, 1980. Sections 2(g) and 3.
Land acquisitions in the Lake Tahoe Basin.
Payments to localities for water pollution control and land management. Authorization is 15 percent of the Land and Water Conservation Fund appropriation for Lake Tahoe Basin land acquisitions each year. Expires when all Clark County, Nevada, land specified in the Act is sold by the U.S. Department of Interior, Bureau of Land Management.

P.L. 99-198, Food Security Act of 1985. (99 Stat. 1354, Title XII, Section 1231-1236) Conservation acreage reserve.
Such sums as may be necessary; no expiration date specified.

Appropriation Summary Statement

Fifty-seven percent of the Nation's commercial forest land is in nonindustrial private ownership. This land is vital in meeting the Nation's needs for natural resources, especially timber. About 45 percent of these lands offer economic opportunities for intensified management. The cooperative State and private forestry programs provide information and assistance to help landowners manage their lands to meet the Nation's need for natural resources.



Ownership
Commercial Forest Land

Natural resource challenges know no boundaries. Fire and pest outbreaks threaten all forest lands. Healthy forests, regardless of ownership, can provide benefits to people and the environment. We respond to millions of landowners across the nation, working with our partners (State Foresters, USDA, and other Federal agencies) to manage natural resources. Our resources also extend beyond national boundaries, since what happens outside the United States affects our resource management. With cooperative partnerships, we develop complementary management practices that benefit the world forestry community as a whole.

Functions of Forest Service State and private forestry programs involve high priority Federal activities that improve the management of forest resources on private forest lands, rural development, forest health, and provide solutions to wildland/urban interface problems. These activities are accomplished through national leadership and assistance in nonindustrial private forest management, protection, and use.

Through these programs, Federal assistance is provided to:

- Help protect non-Federal wildlands from fire and damaging insects and diseases, and reduce losses of timber, tree growth, and quality of wood products.

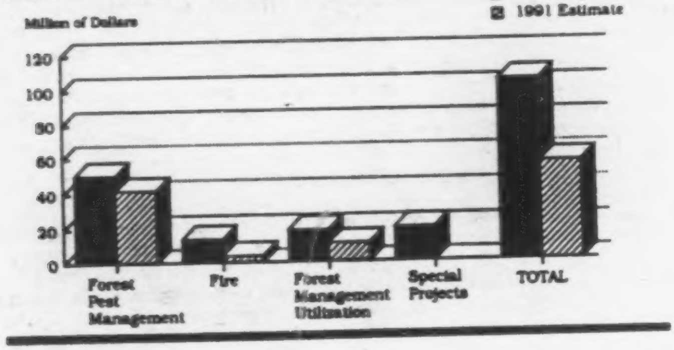
- Help landowners, operators, wood processors, and State and local agencies increase timber growth and harvests; protect soil and water; and improve efficiency and reduce waste in harvesting and wood processing, and through marketing.

- Transfer the results of forestry research and other knowledge to forest landowners and managers to improve forest resource protection, management, and utilization.

- Help manage rural and urban forest resources for multiple uses.

- Coordinate and serve as an information clearinghouse. These functions are carried out in the program areas of forest pest management, fire protection, forest management and utilization, and special projects.

The following chart shows the proposed distribution of State and private forestry funds by program area for FY 1990 and FY 1991.



Cooperation with States

Federal activities in State and private forestry are carried out through close cooperation with State Foresters or equivalent officials in the 50 States, the District of Columbia, the Pacific Islands, Puerto Rico, and the U.S. Virgin Islands. The programs are authorized by the Cooperative Forestry Assistance Act of 1978 (16 U.S.C. 2101-2110).

Forest pest management, fire protection, and forest management and utilization programs fund assistance in State forest resource planning. This planning helps States identify their responsibility and priorities for various forestry management programs.

The Forest Service annually coordinates with each State to set priorities and establish specific activities that the State will contribute to the overall national program. Based on these agreements, Federal assistance is provided to the States. Where Federal funding is reduced or eliminated, individual State priorities and budget constraints determine the level of program activity.

Relation to Other Federal Programs

Forest Service cooperative forestry programs are distinct from and complement assistance programs of the Soil Conservation Service, the Cooperative Extension Service, the Agricultural Stabilization and Conservation Service, the Farmers Home Administration, and other USDA agencies. Interagency agreements establish each agency's responsibility for encouraging protection, management, and use of privately owned forest resources.

Federal cooperative forestry programs help achieve resource management objectives associated with the Soil and Water Resources Conservation Act of 1977, the Secretary of Agriculture's National Conservation Program, and the Conservation Reserve program established by the Food Security Act of 1985.

The forest pest management program provides national leadership and coordination in protection of forests from insects and diseases on all Federal lands. Through this program, Federal resource managers and Forest Service pest management specialists work together to reduce pest-caused losses and improve the health of the nation's forests.

Response to Disaster

The Forest Service, primarily with funding from State and Private Forestry and Firefighting, has the capability to respond to a wide variety of national and international disaster needs. Over the last several years, we have provided personnel and logistical support to many requests for disaster assistance. These include direct assistance for international disaster situations such as the Mexico City Earthquake, locust plagues in Africa, large fire conflagrations in Argentina and Mexico, and domestically for the Yellowstone Fire complex, Hurricane Hugo, and the San Francisco Loma Prieta earthquake.

Communications networks, disaster coordination management teams, aviation transportation, firefighter crews, and assistance in the overall organization of multi-agency response efforts are typical examples of support. No other civilian agency has the capability to rapidly mobilize thousands of personnel and provide emergency support on such a scale. Our ability stems in large part from our firefighting training and availability of experienced personnel funded by the fire protection appropriation.

In addition to the direct support available, the Forest Service has programs and technical specialists in a wide variety of disciplines. They provide assistance to international, other Federal, State, and local governments for mitigating and preparing for disaster situations.

Domestically we direct technical assistance to the States for mitigating and improving their fire suppression capability. We also serve as technical fire advisors to FEMA in their Disaster Assistance Program.

Forest pest management entomologists and remote sensing specialists assess resource damage and the potential for forest insect outbreaks following major storms. Forest pest management entomologists serve on international advisory teams for insect control projects such as locust control in Africa.

Internationally we work through the State Department's Office of Foreign Disaster Assistance and USDA's Office of International Cooperation and Development. The Forest Service is also helping to organize the "Decade for Natural Disaster Reduction". This is a new National and International multi-agency effort to reduce the risk and effects of disaster worldwide.

Through the Emergency Watershed Protection program, the Forest Service is unrivaled in responding to disaster needs. In cooperation with the Soil Conservation Service, Forest Service technical specialists assist in the planning of emergency conservation measures on State and private land. In the case of burn rehabilitation, we frequently arrange to treat non-Federal lands in conjunction with National Forest lands. These emergency measures help prevent further damage to communities, public water supplies, and transportation systems.

In cases of major damage to forest resources as might be caused by adverse weather conditions, such as hurricanes and tornadoes; insects; or diseases, the Forest Service can assign wood utilization and marketing specialists to expedite salvage, marketing, and other recovery operations to minimize economic losses.

FRANCIS MARION
National
Forest
US

September 1989: Devastation created by Hurricane Hugo.

Forest Pest Management

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in	thousands)		
Federal lands:						
Survey and technical assistance......................$	14,135	15,572	15,386	16,103	17,261	+1,158
Million acres	130	152	150	150	152	+2
FTE	264	269	269	269	270	+1
Insect and disease suppression..................$	15,854	16,165	15,970	16,682	18,008	+1,326
Thousand acres	398	N/A	N/A	N/A	N/A	N/A
FTE	154	157	157	157	157	0
Special projects.............$	1,211	2,869	2,835	2,957	2,970	+13
FTE	8	10	10	10	10	0
Cooperative Lands:						
Surveys and technical assistance.....................$	2,077	2,302	2,275	2,372	3,453	+1,081
Million acres	441	457	450	450	428	-22
FTE	4	4	4	4	4	0
Insect and disease suppression..................$	10,800	10,700	10,573	11,019	0	-11,019
Thousand acres	753	N/A	N/A	N/A	N/A	N/A
FTE	12	13	13	13	0	-13
Appalachian IPM...........$	5,600	4,400	4,348	4,531	0	-4,531
FTE	3	3	3	3	0	-3
Total.........................$	49,677	52,008	51,386	53,664	41,692	-11,972
FTE	445	456	456	456	441	-15

General

The forest pest management program provides protection from insects and diseases on all Federal and non-Federal lands, with emphasis on integrated pest management. Resource managers and pest management specialists work together to reduce pest caused losses on our Nation's forest resources. This requires recognizing stand conditions conducive to pest outbreaks; detecting potentially damaging outbreaks; thoroughly evaluating potential impacts of these outbreaks; and preventing and suppressing outbreaks in a manner that is biologically, economically, and environmentally sound. A large part of the forest pest prevention and suppression effort is an integral part of forest planning and resource management activities.

Land managers and the public have become increasingly concerned with protecting the health of the Nation's forests. The Forest Service has completed a strategic plan for improving and maintaining forest health. The plan which is now being implemented focuses on resource planning and management, forest health monitoring, pest suppression, pesticide use, environmental analysis, and technology development. The major concern continues to be protection from insect and disease agents, including air pollutants. The agents endanger forest health and productivity by killing trees, reducing tree growth, and lowering the quality of wood. Wood production, wildlife habitat, and recreation values are adversely affected by these agents.

In FY 1990, a long term forest health monitoring system was implemented in the Northeast with initial work in the New England States. The system includes Federal lands and, in cooperation with States, State and private lands. This is the first phase in implementing a nationwide system, which was identified as a need in the strategic plan for forest health, and will provide timely data on changes in the health of the nation's forests. Pest impacts on forest health will be monitored by the forest pest management program.

Federal Lands: Surveys and Technical Assistance

Objective

To detect and evaluate insect and disease outbreaks on Federal lands. To provide technical assistance on integrated pest management, forest health, prevention strategies, and proper use and handling of pesticides. To provide pest status and forest health information to Federal land managers, managers of intermingled and adjacent lands, and Congress. To cooperate, participate, and consult with the States on protection strategies for non-Federal and intermingled lands.

Program description

This program provides for pest detection surveys and evaluations on all Federal forest lands, including the National Forest System, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, Fish and Wildlife Service, Corps of Engineers, and military installations.

Detection surveys ensure that new outbreaks are discovered at an early stage to minimize suppression costs and resource losses. Biological evaluations ensure that suppression is carried out only when and where it is needed.

A major goal of this program is to enhance forest health by incorporating pest management principles into forest management, thereby reducing major pest outbreaks and the resulting loss of the resource and increased suppression costs.

Technical advice and information is also provided to Federal land managers by sponsoring training, seminars, symposia, and workshops. These sessions are designed to encourage sound pest management, forest health, and proper use of pesticides in forest resource management.

In FY 1990, the Forest Service began an economic efficiency analysis of the pest survey and technical assistance program. The analysis, to be completed in two years, will help identify opportunities to enhance program efficiency.

In FY 1989, 130 million acres of Federal forest lands were surveyed, resulting in 630 biological evaluations on 8 million acres of land. Major forest pest problems surveyed and evaluated in FY 1989 included spruce decline and gypsy moth in the East; dwarf mistletoe, mountain pine beetle, Engelmann spruce beetle, Douglas-fir tussock moth, root rots, and western spruce budworm in the West; and southern pine beetle and oak wilt in the South. These surveys and evaluations delineated insect and disease occurrences, including damage possibly caused by atmospheric pollution or acid deposition. They also provided land managers with information needed to evaluate control needs and options.

Through this program in FY 1989, 3,574 Federal employees received training in insect and disease management and 1,336 Federal employees were trained in pesticide use management and coordination.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Federal lands:				
Surveys and technical assistance		$ 16,103	17,261	+1,158
	FTE	269	270	+1

An increase of $1,158,000 is proposed from the 1991 base.

This will increase detection and evaluation activities on Federal lands to ensure prompt response to pest outbreaks and nationwide monitoring of forest health.

An increased level of technical assistance and training will be provided to Federal and State land managers to ensure a prompt and appropriate response to pest outbreaks, application of integrated pest management and prevention strategies, and proper use and handling of pesticides.

High priority will be given to implementation of the Agency's strategic plan for the improvement and maintenance of forest health, including coordination and joint planning of forest health strategies with States for intermingled and adjacent lands.

Object class information

Salary and benefits	+35
Travel	+188
Transportation of things	+40
Rent, communication, and utilities	+150
Printing and reproduction	+37
Other services	+410
Supplies, materials, and equipment	+298
Total	+1,158

Federal Lands: Insect and Disease Suppression

Objective

To prevent and reduce unacceptable forest resource losses by suppressing damaging forest insects and diseases. To respond promptly to unexpected or rapidly expanding outbreaks in order to minimize resource losses and suppression costs. To eradicate isolated gypsy moth infestations. To cooperate, participate, and consult with States on suppression and eradication strategies for non-Federal and intermingled lands. To maintain healthy, productive forest environments.

Program description

This program provides for pest suppression and gypsy moth eradication on all Federal forest lands, including the National Forest System, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, Fish and Wildlife Service, Corps of Engineers, and military installations. Suppression is coordinated with State land management and environmental protection agencies.

Suppression protects timber, wildlife habitat, and recreation values. Protection of timber minimizes disruptions in wood supply and associated employment and price structures. Eradication of isolated gypsy moth infestations prevents establishment of this damaging pest in new areas.

Cultural, biological, chemical, and mechanical methods are used to suppress major forest pests that weaken and kill trees, slow growth, and reduce the quality of the forest environment. Examples of current major pest outbreaks are the gypsy moth, western spruce budworm, southern pine beetle, and dwarf mistletoes.

Federal lands suppression funds are used on State and private lands when Federal suppression or eradication projects include intermingled and private lands as part of a biologically sound treatment unit.

In FY 1989, major suppression projects were carried out against the gypsy moth, southern pine beetle, douglas-fir tussock moth, and western spruce budworm. The largest single suppression project was on the Plumas and Lassen National Forests in California, where 77,000 acres infested by the Douglas-fir tussock moth were successfully treated with the biological insecticide, Bacillus thuringiesis.

During FY 1989, suppression treatments were applied to insect and disease outbreaks on 363,259 acres of National Forest System lands and 34,658 acres of other Federal lands. These treatments protected 481 million cubic feet of merchantable timber. Salvage harvests removed 16 million cubic feet of infested merchantable timber.

These suppression activities halted further degradation of aesthetics, recreation, wildlife habitat, water quality, and other resource values in the treatment areas.

Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Federal lands:			
Insect and disease suppression . . . .$	16,682	18,008	+1,326
FTE	157	157	0

An increase of $1,326,000 is proposed from the 1991 base.

This program level will provide increased suppression to protect critical forest resources from damaging outbreaks of major pests including gypsy moth, southern pine beetle, mountain pine beetle, Douglas-fir tussock moth, and western spruce budworm. This program level also provides for eradication of isolated gypsy moth infestations threatening Federal land and for emergency suppression of unexpected or rapidly expanding pest outbreaks.

This funding level provides for increased suppression readiness through collection of technical and operational data on promising pesticides and pesticide related techniques and strategies; preparation and update of background statements and human health risk assessments for pesticides used in forestry; and for appropriate responses to forest pest suppression related litigation.

Object class information

Travel	+70
Transportation of things	+22
Rent, communication, and utilities	+49
Printing and reproduction	+5
Other services	+1,064
Supplies, materials, and equipment	+116
Total	+1,326

Initial targets for pest suppression are not included for FY 1990 and FY 1991, as specific outbreaks cannot be forecast at this time. However, expectations are that major pest outbreaks will continue and suppression will be necessary to reduce economic damage and tree mortality from mistletoes, bark beetles, and defoliators.

Southern pine beetle suppression to protect a colony of the red-cockaded woodpecker, an endangered species, on the Homochitto National Forest, Mississippi, 1989. The logging slash in the foreground is from beetle-infested trees which were removed to protect the red-cockaded woodpecker cavity trees (the white-banded trees in the background).

Special Projects

Objective

To obtain information on long term pest trends and to monitor impacts on forest health. To develop and demonstrate new or improved technology, and to incorporate this technology in survey and technical assistance and suppression activities. To assess benefits and risks of using pesticides for forest pest management activities.

Program description

This program assesses the impacts of pests such as western spruce budworm, gypsy moth, southern pine beetle, as well as air pollution, on forest health, and provides information for improved forest management program decisions.

Special projects are used to develop, improve, and demonstrate new technologies, materials, methods, and strategies to improve the efficiency of forest pest management.

Projects are also used to evaluate the benefits and environmental risks of using pesticides critically important to forestry under the USDA National Agricultural Pesticide Impact Assessment Program (NAPIAP). NAPIAP projects fill data gaps on environmental effects, human exposure, and timber growth yields associated with the use of pesticides in forestry.

High priority will continue to be given to implementing the Forest Service's strategic plan for improving forest health, implementing forest health monitoring, and developing methods to ensure that the forest planning process considers pest caused tree mortality. Emphasis will also continue on developing pesticide application technology and on evaluating improved pesticides. Work will continue on southern pine beetle management demonstrations and production of the Douglas-fir tussock moth virus.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Federal lands:				
Special projects.		$ 2,957	2,970	+13
	FTE	10	10	0

An increase of $13,000 is proposed from the 1991 base.

Funding at this level allows us to continue high priority special projects related to southern pine beetle, gypsy moth, forest health monitoring, and the National Agricultural Pesticide Impact Assessment Program.

We will continue to implement the Forest Service's strategic plan for improving and maintaining forest health.

Object class information

Other services	+13
Total	+13

Cooperative Lands: Surveys and Technical Assistance

Objective

To maximize Federal and State efficiency in carrying out a coordinated pest management program. To detect and evaluate insect and disease outbreaks in their early stages so that forest resource losses and suppression costs are reduced. To coordinate forest health and prevention strategies that will benefit all landowners. To develop pest status information needed by forest pest management specialists to monitor, assess, and report regional pest trends and forest health problems that can affect all landownerships.

Program description

The Cooperative Forest Pest Action Program shares costs with the States for surveying and evaluating insects and diseases. These assessments provide managers of Federal lands, intermingled with or adjacent to State and private lands, with information needed for USDA pest management coordination roles. The information is also used to assess the health of the Nation's forests with respect to forest pests.

When pest outbreaks overlap ownership boundaries, a coordinated survey approach increases efficiency on all ownerships. In 1989, for example, outbreaks of the Douglas-fir tussock moth, southern pine beetle, western spruce budworm, and gypsy moth affected both Federal and adjacent State and private lands. Forest Service and State surveys were coordinated to effectively and efficiently obtain pest information needed by Federal, State, and private landowners. Surveys on State and private lands were done under the Cooperative Forest Pest Action Program with the States providing 50 percent or more of the survey funding.

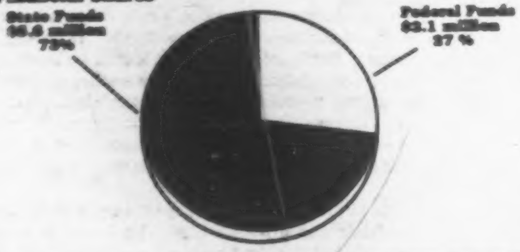
The program shares the cost of providing technical assistance and transferring research results to private forest landowners. This approach minimizes damage to the environment and human health that can result from uninformed and uncoordinated pest management activities.

In FY 1989, this program surveyed 441 million acres of State and private lands to detect pests. These surveys resulted in 1,531 evaluations of pest conditions and recommendations for pest management on 149 million acres.

In FY 1989, this program helped train 13,743 State personnel in insect and disease management and 7,955 personnel in pesticide use management and coordination.

Federal financial assistance provides up to 50 percent of the cost of the Cooperative Forest Pest Action Program in participating States. To qualify for participation in the program, a State must have at least one professional forest pest management specialist. The funds made available to each State are based on services provided and the non-Federal forested acreage in the State.

Cooperative Surveys and Technical Assistance
1989 Financial Shares



Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Cooperative lands:			
Surveys and technical assistance	$ 2,372	3,453	+1,081
FTE	4	4	0

An increase of $1,081,000 is proposed from the 1991 base.

This program level increases Federal participation in the Cooperative Forest Pest Action Program. The Cooperative Forest Pest Action Program at this program level emphasizes collection of insect and disease incidence and damage information, implementation of nationwide forest health monitoring, and increased detection and prevention of pest outbreaks on State and private lands that threaten intermingled and adjacent Federal lands.

Object class information

Grants, subsidies, and contribution	+1,081
Total	+1,081

Cooperative Lands: Insect and Disease Suppression

Objective

To coordinate suppression projects on landownerships intermingled with, or adjacent to, Federal lands. To prevent and reduce unacceptable forest resource losses on State and private forests by suppressing damaging forest insects and diseases. To respond promptly to unexpected or rapidly expanding outbreaks to minimize resource losses and suppression costs. To eradicate isolated gypsy moth infestations larger than 640 acres on State and private lands. To maintain healthy, productive forest environments.

Program description

This program provides for pest suppression and gypsy moth eradication on State and private lands. The suppression effort protects timber, wildlife habitat, and recreation values. Protection of timber helps minimize disruptions in wood supply and associated employment and price structures.

These efforts are coordinated with Federal and State land management and environmental agencies.

When a pest outbreak threatens Federal, State, and private lands, a coordinated approach increases suppression effectiveness and efficiency on all ownerships. In 1989, for example, outbreaks of the Douglas-fir tussock moth, and gypsy moth threatened both Federal and adjacent State and private lands. Suppression was coordinated to provide protection to all ownerships and minimize costs. Suppression on the State and private lands was done under the Cooperative suppression program with the State and private landowners providing 50 percent or more of the funding.

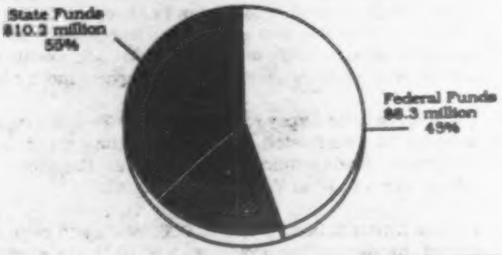
Cultural, biological, chemical, and mechanical methods suppress major forest pests that weaken and kill trees, slow growth, and reduce the quality of the forest environment.

In FY 1989, most suppression on State and private lands was done in areas threatened by the gypsy moth. Cooperative gypsy moth suppression projects were carried out on 701,612 acres in seven states. Other major problems on State and private lands included western spruce budworm, southern pine beetle, mountain pine beetle, and oak wilt disease.

Federal financial assistance is provided for projects that meet Federal biological, environmental, and economic criteria. This program provides funds for financial assistance at the following rates: 25 percent on non-Federal public lands, 33 1/3 percent on industrial lands, and 50 percent on nonindustrial private lands.

In FY 1989, this program treated 753,373 acres of State and private lands, protected 366 million cubic feet of merchantable timber, and removed 10 million cubic feet of infested merchantable timber through salvage operations.

Cooperative Insect and Disease Suppression 1989 Financial Shares



Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Cooperative lands:				
Insect and disease suppression	$	11,019	0	-11,019
	FTE	13	0	-13

A decrease of $11,019,000 is proposed from the 1991 base.

This funding level will eliminate Federal financial assistance to the States for cooperative insect and disease suppression projects. State and private landowners will be responsible for the entire cost of pest suppression and eradication of isolated gypsy moth infestations. Federal lands suppression funds will be used on intermingled and adjacent State and private lands when suppression or eradication is required to protect forest resources on Federal lands.

Anticipated high priority suppression needs on State and private lands include gypsy moth, southern pine beetle, Douglas-fir tussock moth, and western spruce budworm.

Object class information

Salaries and benefits	-455
Travel	-20
Other services	-421
Grants, subsidies, and contributions	-10,123
Total	-11,019

Appalachian Gypsy Moth Integrated Pest Management Project

Objective

To slow the spread and reduce the impact of the gypsy moth movement in the Allegheny and Appalachian hardwoods, through West Virginia and Virginia. To develop and evaluate an integrated pest management approach for use nationwide. To develop and evaluate intervention tactics for the management of isolated gypsy moth populations.

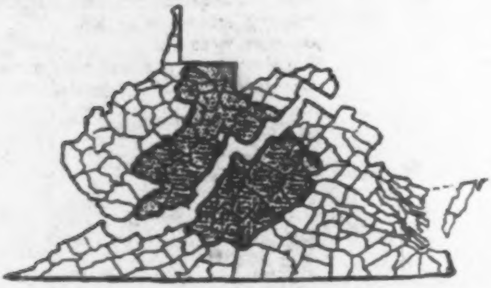
Program description

The Appalachian Gypsy Moth Integrated Pest Management Project provides for coordinated action against the gypsy moth on Federal, State, and private lands within the project area. The project area includes 12.8 million acres in West Virginia and Virginia.

To plan future action, about 10,000 male moth collection sites were placed throughout the project area in 1989. Intervention treatments were carried out on 42,000 acres. In addition, pilot studies to evaluate other management tactics (gypsy moth virus, *Bacillus thuringiensis*) were conducted on another 6,100 acres.

State and Federal cooperators as well as representatives of industry and environmental groups have been involved in project planning and implementation. A final environmental impact statement has been prepared and published. A geographic information system has been acquired and is in operational use for analysis and display of data for decisionmaking. Various remote sensing methods, including high altitude photography and satellite imagery, are being used to evaluate resource condition and project success. A public information team has been established.

AIPM Project Area in West Virginia and Virginia



▨ **AIPM Project Area in West Virginia and Virginia**

This Project Area includes 20 counties in West Virginia and 18 counties in neighboring Virginia.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Appalachian Gypsy Moth Pest Management	$ 4,531	0	-4,531
FTE	3	0	-3

A decrease of $4,531,000 is proposed from the 1991 base.

This will discontinue funding for the Appalachian Gypsy Moth Integrated Pest Management Project. Suppression may still be carried out against any high priority gypsy moth outbreaks causing damage on or threatening Federal lands in the project area. (See Federal lands: Insect and Disease Suppression and Cooperative lands: Insect and Disease Suppression).

Survey and technical assistance will continue in the project area. (See Federal lands: Survey and Technical Assistance and Cooperative lands: Survey and Technical Assistance.)

Object class information	Salaries and benefits	-105
	Travel	-18
	Transportation of things	-9
	Rent, communications, and utilities	-83
	Printing and reproduction	-16
	Other services	-60
	Supplies, materials, and equipment	-148
	Grants, subsidies, and contributions	-4,092
	Total	-4,531

Fire Protection

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec.(-) from Base
				(Dollars in thousands)			
Fire protection	$	13,851	14,400	14,228	14,838	4,011	-10,827
	FTE	43	44	44	44	40	-4

Objective

To achieve efficiency in fire protection on non-Federal wildlands. To achieve national benefits that exceed Federal expenditures for fire protection on non-Federal wildlands. To cooperate, participate, and consult with the States on fire protection for non-Federal wildlands and other rural lands.

Program description

The Cooperative Fire Protection (CFP) program helps protect 834 million acres of non-Federal lands from wildfire.

States and their political subdivisions have the primary responsibility for fire protection. The fire protection program uses Forest Service technical and related assistance to assist the States to efficiently and adequately protect non-Federal wildlands. Program objectives are achieved through leadership, coordination, and cooperation.

The CFP program consists of:

- Wildland fire protection. Provide federal technical and related assistance in fire protection for non-Federal wildlands. The Wildland Urban Fire Protection Initiative is an example of responding to the emerging issue of increased residential development into the wildland interface, increasing the need for coordinated fire protection for Federal and non-Federal lands.

The Wildland-Urban Interface - where forest meets home

- Federal excess personal property. Loan Federal excess personal property to State Foresters for rural fire protection programs. Because of the shortage of some types of property in this program, like helicopters and vehicles, an efficiency analysis is used to assign the property where the greatest potential gain can be expected.

- Cooperative Forest Fire Prevention Program. Provide a nationwide fire prevention program through public service advertising, educational and sports activities, licensing, awards, corporate partnerships, and coordination and cooperation with other organizations to deliver the prevention message.

National interest priorities are:

- Information. Collect consistent historical data for planning and analysis, assess the accomplishments of and opportunities for improved management, and conduct efficiency studies.

- Analysis and planning. Help States determine the efficient use of fire protection resources and steps to implement and maintain efficient levels of fire protection.

- Technology development and transfer. Provide assistance for development and transfer of new ideas and technologies between States and Federal agencies to improve fire protection efficiency.

- Shared protection resources. Develop and maintain fire protection resources to share among Federal, State, and local agencies for more cost effective operations.

The combination of increased State funding and direct Federal financial and technical assistance to States under this program has been successful in significantly reducing the burned acres. The average annual acreage burned on State and private lands between 1957-1988 has been about 3.0 million acres, compared with an annual average of some 36.5 million acres between 1924-1940, which was the first decade of Federal participation in State fire protection programs.

The program emphasizes Forest Service participation in activities that result in the most efficient level of cooperative fire protection, with priorities on activities of national interest.

Individual State financial assistance is distributed by an agreement that has been negotiated with the States. It consists of two components for each State, one based on the appropriate level of fire protection and the other on the actual expenditure level. Three factors recognized within these components are population, area, and fire activity.

The proportion of program funds made available to each region is based on this agreement. The regions, in turn, allocate to States based on regional plans and negotiated agreements. Some adjustments are made among States based on regional priorities.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Fire protection.............	$	14,838	4,011	-10,827
	FTE	44	40	-4

A decrease of $10,827,000 is proposed from the 1991 base.

This program level will provide specialized technical assistance to the States and eliminate State financial assistance funds, including the collection of information and reporting of fire data. Technical assistance will focus on improved fire analyses for more efficient fire organizations and utilization of existing resources. Greater reliance will be placed on local units to assume responsibility for training, equipping, and mobilizing State firefighting forces for their lands, as well as for support of federal protection contracts and agreements. State forces are often relied upon to support Forest Service operations during periods of high activity.

This funding level will limit the Federal role of providing technical assistance for States to:

- Complete basic State efficiency analysis, incorporate results into regional and national plans, and provide new technology in fire planning.
- Train and implement the National Interagency Incident Management System, a total systems approach that provides for an all-risk incident command.
- Provide for States' participation with all Federal agencies in national wildland fire coordination, and participation as members of the National Wildfire Coordinating Group and in national training courses.
- Transfer new firefighting technology for standardization and coordination of shared resources between State and Federal agencies.
- Implement wildland fire prevention programs, including the Smokey Bear Program.
- Acquire and manage Federal excess personal property for more efficient State wildland and rural community fire protection as determined through planning and analysis.
- Provide technical advice to the Federal Emergency Management Agency in State fire emergencies.

Object class information	Salaries and benefits	-120
	Travel	-35
	Transportation of things	-5
	Other services	-561
	Grants, subsidies, and contributions	-10,106
	Total	-10,827

Forest Management and Utilization

(Dollars in thousands)

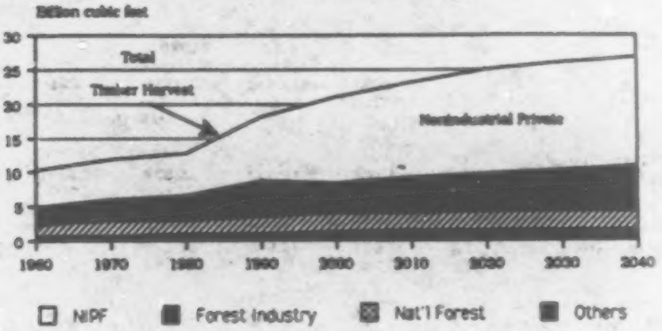
		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec.(-) from Base
Forest resource management	$	4,983	13,500	13,339	13,915	5,684	-8,231
	Thousand acres	1,163	5,585	5,500	5,500	4,000	-1,500
	FTE	44	58	58	58	40	-18
Wood utilization	$	991	1,000	988	1,035	1,500	+465
	FTE	20	20	20	20	21	+1
Seedlings, nursery and tree improvement	$	1,795	1,900	1,877	1,958	1,730	-228
	Million seedlings	852	1,000	985	985	1,000	+15
	FTE	9	9	9	9	6	-3
Urban forestry	$	2,496	2,800	2,767	2,886	2,000	-886
	FTE	7	7	7	7	5	-2
Total	$	10,265	19,200	18,971	19,794	10,914	-8,880
	FTE	80	94	94	94	72	-22

General

Private nonindustrial forest lands are a major source of U.S. wood supplies. Timber output from nonindustrial private forest lands is projected to exceed public and industrial sources in the future. Cooperative Federal-State programs improve the productivity of these lands.

Harvests from public lands are projected to remain fairly stable. Forest Industry lands have the potential to provide slightly expanded timber harvests in the future. To meet future demands for forest products, nonindustrial private forest lands take on added significance. As the graph indicates, these lands must contribute a substantially increased portion of the projected total timber harvest.

**Timber Harvest by Ownership Class
With Projections to 2040**



As part of the President's "America the Beautiful" campaign, the FY 1991 estimate includes $175 million for a new tree planting and forest improvement initiative. This new initiative will be implemented, in part, through the Federal/State forestry delivery system that is supported by the forest management and utilization program. Together, these programs have a tremendous opportunity to enhance our environment and beautify the American landscape. (See America the Beautiful section)

Forest Resource Management

Objective

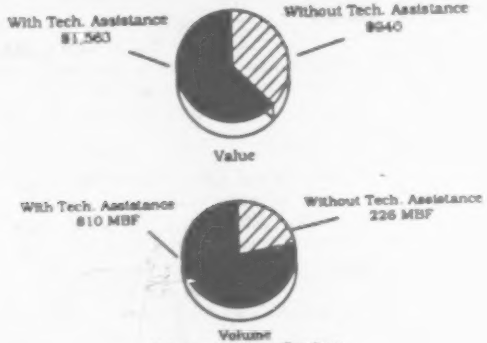
To help private landowners apply sound forestry practices. To find better ways to manage and use natural resources on nonindustrial private forest lands. To protect soil and water resources, improve wildlife habitat, increase outdoor recreation opportunities, as well as provide wood products and adequate regeneration of harvested timber.

Program description

Cooperative technical assistance in forest management is provided to private landowners by the Forest Service through State forestry agencies.

Technical assistance improves the likelihood that private landowners will reforest after harvest and increase their economic return, which may encourage private investment in forest management. Technical assistance also enhances water quality, and ensures the value and quality of forest stands after harvest or timber stand improvement. Private forest lands that receive technical assistance are more valuable, contribute more to future timber supplies, have greater timber volume, and retain more value in residual stands after harvesting. Improper harvesting and logging operations may unnecessarily reduce water quality and diminish the quality and value of residual forest stands.

Economic Value of Technical Assistance Provided through Cooperative Forest Management Programs



Value and Volume Per Acre

Forest resource management programs help diversify rural economies and support government service efforts to revitalize rural development activities while meeting the needs of private landowners and the resource.

This program also coordinates cooperative technical assistance in implementing forestry related environmental and conservation practices that will be outlined in the 1990 Farm Bill. Under the guidance of the Forest Service, State foresters will work with the Soil Conservation Service and the Agricultural Stabilization and Conservation Service to help landowners place eroding lands into trees, wildlife plantings, filter strips, windbreaks, and accomplish other forestry practices authorized by the 1990 Farm Bill.

State foresters and contracted private consulting foresters provide technical assistance to landowners to develop tree planting plans and ensure proper tree planting. This activity promotes conservation and helps curb excess crop production, while at the same time helping rural communities increase forest-based employment.

Tree planting and forest improvement practices are helping the Nation and the world mitigate effects of global warming.

Today's record level of timber harvesting is not being matched by a corresponding increase in reforestation and management on nonidustrial private forest lands (NIPF). Currently, 68 percent of harvested acres in the South remain unstocked or regenerate in low quality hardwoods. This situation exists in other regions of the country. The Forest Stewardship Program places increased emphasis on reaching landowners to develop a forest resource plan prior to timber harvesting, an approach that provides landowners with many more options for improved forestry related practices.

In FY 1990, Congress included $5.9 million for a Stewardship Initiative. The Stewardship Program will provide private forest landowners with resource management options designed to meet their objectives, and help them strike a balance between the production of commodity products, such as timber harvested, and amenity values, such as wildlife habitat and recreation.

Rural development is an integral part of most cooperative forestry programs as all aspects of forest management and utilization create local employment opportunities. Recent changes in management practices on the National Forests have made it necessary to increase rural development activities in timber dependent communities to help them diversify their economies and stabilize the tax base. This portion of the program provides both technical and financial assistance to depressed areas.

The Rural Development Initiative, funded at $2.47 million in FY 1990 will provide technical and financial assistance to States, counties, and rural communities to help them improve their local economies through a wide variety of activities.

Improved forest resource management is an important area in which the Forest Service serves the public through State Forestry organizations. Surveys have shown that forest management assistance provided by State foresters is the most important factor influencing reforestation decisions by landowners. The probability of a landowner reforesting lands is 60 percent greater when a State forester consults with the landowner. This factor exceeds the influence of market variables, income, and size of ownership.

Landowners that seek technical assistance before harvesting timber products learn Stewardship principles that protect wildlife cavity trees.

Taxation and financial consultation services are also made available to the nonindustrial private forest landowners. Services include providing information on complex federal income tax laws and tax treatment of incentives provided for forestry. Plans include working with various groups to propose legislation for equitable tax treatment of timber income.

Tax conferences and seminars jointly conducted by the Forest Service, State forestry organizations, and the Extension Service continue to help educate the private landowner. More knowledge will increase utilization of programs and compliance with tax laws.

Information management is another important service. To ensure that data regarding forest lands are available for, and effectively presented in State and Federal natural resources planning, the Forest Service, in conjunction with the State forestry organization, provides a framework for the management of this data. Once collected, data is synthesized into information for use by individuals, organizations, and agencies involved with forest resource management. Informational services are provided to the public through publications and statistical reports.

The Forest Service is also recognized by th Environmental Protection Administration (EPA) as having expertise in nonpoint pollution control for forestry activities. Forest resource management provides research information and assistance to States and collaborates with EPA in the implementation of the Clean Water Act and the Chesapeake Bay Initiative.

The proportion of program funds made available to each State is based on an agreement established by the National Association of State Foresters and the Forest Service after passage of the Cooperative Forestry Assistance Act of 1978. State financial assistance established by this agreement was developed considering the numbers of landowners, acres of commerical forest land, and the level of State appropriated expenditures.

Allocations are made to Forest Service regions and the Northeastern Area for distribution to the States based on this agreement. Financial assistance to States is based on negotiations between the Forest Service and State foresters to carry out high priority activities in forest management. In some instances, financial assistance is focused to multi-State efforts to achieve specific, short term objectives.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	[Dollars in thousands]		
Forest resource management. . . . . $	13,915	5,684	-8,231
FTE	58	40	-18

A decrease of $8,231,000 is proposed from the 1991 base.

This funding level maintains the Forest Resource Management program at a budget level consistent with the fiscal years prior to FY 1990. For FY 1990, this activity was increased by $5,928,000 for a Forest Stewardship Initiative, and $2,470,000 to support a Rural Development Initiative.

Forest Resource Management is the primary activity that supports the Federal and State cooperative forestry delivery system. This infrastructure provides the channel for technical and financial assistance to get to the nonindustrial private landowners.

Federal technical and financial assistance will be available to States for the highest priority national nonindustrial private forestry concerns, such as timber supply and water quality. Forestry plans for about 4 million acres will be prepared, compared to an estimated 5.5 million acres in FY 1990. Accomplishments for FY 1991 should be approximately 400,000 acres of tree planting, 200,000 acres of timber stand improvement, and 300 million cubic feet of timber harvested; compared to 500,000 acres of tree planting, 250,000 acres of timber stand improvement, and 500 million cubic feet of timber harvested in FY 1990.

The Forest Stewardship and Rural Development Initiatives will be discontinued for FY 1991. Some states may choose to continue supporting stewardship and rural development activities within their existing priorities and budgets.

Object class information

Salaries and benefits	-650
Travel	-50
Transportation of thing	-20
Rent, communications, and utilities	-65
Printing and reproduction	-15
Supplies, material, and equipment	-200
Other services	-1,059
Grants, subsidies, and contributions	-6,172
Total	-8,231

Wood Utilization

Objective

To increase the value and utilization of timber and wood products through improved harvesting, processing, and marketing. To diversify and strengthen rural economies.

Program description

By providing landowners and wood processors with the latest descriptive information available on harvesting, processing, and marketing of forest products, Federal and State utilization and marketing specialists significantly improve the value and use of forest resources. This increases the competitiveness of the forest products industry in the U.S. and expands opportunities to increase exports and reduce imports. This program helps State and local government agencies in economic development of communities with forest industry growth potential.

Technical assistance encourages increased utilization of harvested timber by clearly defining recovery alternatives. Wood product manufacturing costs are reduced by applying such information, thus generating higher profits for industry and increasing tax returns to the U.S. Treasury. It is estimated that if half of the firms that receive technical assistance in lumber processing undertake recommended improvements, tax payments to the U.S. Treasury would increase approximately $22.8 million a year.

Technical assistance in timber harvesting substantially reduces loss of quality and volume of wood due to improper harvesting, providing immediate supply gains in the short term, and reducing the drain on the forests in the long term. On the average, operators lose about 6 percent of merchantable wood volume during harvesting because of poor or careless practices. This is equivalent to the loss of about 4.8 billion board feet (752 million cubic feet) of the annual timber harvest. If corrected to reasonable levels, industry could harvest over 88 million fewer acres of timberland, and produce the same amount of wood products.

No utilization funds are distributed to States.

The wood utilization program has provided technical assistance to a wide range of public and private clients for many years. In addition to serving the public, this activity has been an excellent method for successfully introducing new technology developed at the Forest Products Laboratory and other research facilities.

As raw material needs shift from Federal to nonindustrial private forest lands, they will be met by a timber resource that has a higher proportion of hardwood species. Preparation for meeting those needs include demonstrations for producing structural lumber from hardwoods. This is an action that is facilitated by the recent approval of stress ratings for several hardwood species groups.

Expanding markets for timber bridges on rural and secondary roads is a project that exemplifies these activities. Modern timber bridge technology has been developed during the past few years to provide safe, affordable, short to medium span bridges throughout the country.

These bridges would help bring our rural road system up to current traffic requirements. Implementation of a Timber Bridge Initiative was started in FY 1989 with $2.7 million, in cooperation with the Federal Highway Administration and many others. This funding was provided to the Timber Bridge special project. Wood utilization funds also provided support for this initiative.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Wood utilization	$	1,035	1,500	+465
	FTE	20	21	+1

An increase of $465,000 is proposed from the 1991 base.

This level of funding will support training of additional technical personnel and development of technology transfer facilities for State and Federal utilization and marketing staffs, making them better able to provide assistance to existing and prospective wood using industries. Past experience has shown that Federal funds appropriated for this program are highly leveraged by the States and provide a benefit to cost ratio of 6:1 or better. Training and technical assistance helps industry become more competitive in world markets, and results in the retention and expansion of employment opportunities in rural America.

Object class information

Salaries and benefits	+38
Travel	+19
Rent, communications, and utilities	+57
Printing and reproduction	+38
Supplies, material, and equipment	+218
Other services	+95
Total	+465

Seedlings, Nursery, and Tree Improvement

Objective

To provide high quality, genetically improved tree seed and planting stock for reforestation, which protects soil and water resources and improves productivity.

Program description

The USDA Forest Service cooperative program assists State governments with their tree improvement and nursery programs. This is part of a Congressional mandate to protect and increase productivity of the Nation's forests. The program is directed toward upgrading the quality of nursery operations and producing trees with improved survival, growth, form, resistance to insects and disease, and wood quality.

The 88 State forest nurseries, developed with Federal and State funds, produce about 37 percent of total seedling production in the United States. State nurseries are the primary source of tree seedlings for the nonindustrial forest landowners who hold nearly 58 percent of the forest land acreage in the country.

Increased yields of up to 20-30 percent are possible through second generation genetic improvement in tree breeding. These productivity gains are permanent, and increase stand values by 30-50 percent due to faster growth and improved wood quality.

Meeting the forest industry's projected softwood timber demand requires doubling reforestation. Use of high quality genetically improved planting stock results in faster growing trees and higher survival rates for seedlings to meet reforestation needs. Over 85 percent of all planting stock produced in southern State nurseries is now genetically improved.

The Forest Service provides for the dissemination of information and equipment development to State, private, and Federal nurseries as well as evolving nursery and reforestation programs in developing countries.

The Forest Service operates a tree seed bank which provides seed to international scientists for research purposes.

Federal nursery and tree improvement specialists promote certification programs designed to identify and control the quality of forest tree seeds and seedlings among national and international forestry organizations.

Forest Service reforestation specialists sponsor training and education programs for those involved in major tree planting programs on forest nursery management, tree improvement, tree planting methodology, and species maintenance requirements.

The proportion of program funds made available to each State is based on the needs and opportunities which protect and improve the productivity of the Nation's non-Federal forests. Financial assistance to States is based on negotiations between the Forest Service and State foresters to best meet national priorities and opportunities for tree planting and the associated needs for nursery and tree improvement programs.

The 1990 Farm Bill and concern about global climate change will likely spur even more planting efforts in this country.

FOREST TREE SEEDLINGS
Genetically Improved from Certified Seed

South Carolina Forestry Commission's refrigerated truck hauling approximately one half million seedlings from State nursery to private Forest owners. This truckload will provide enough trees to plant over 700 acres.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Seedlings, nursery, and tree improvement	$	1,958	1,730	-228
	FTE	9	6	-3

A decrease of $228,000 is proposed from the 1991 base.

Although this program is highly leveraged with State funds, the proposed budget reduction will directly affect the quality of seedling production and reforestation success by reducing the level of technical assistance available to landowners.

Object class information	Salaries and benefits..................	-100
	Other services.........................	-10
	Grants, subsidies, and contributions......	-118
	Total................................	-228

Urban Forestry

Objective

To enhance community life and the biological environment of cities and communities. To maximize awareness of the contributions of urban forests to improve soil, water, air quality, energy production, and conservation. To reduce the effects of global warming and the amounts of carbon dioxide in the atmosphere.

Program description

The urban forestry program is a partnership effort with State forestry agencies and professional organizations to improve the quality of life and environment in our communities by providing technical assistance on a wide range of urban forestry problems. An estimated three-fourths of the American public live in urban communities. Presently, 31 States have full time urban forestry specialists to coordinate program activities statewide.

Some examples of FY 1989 accomplishments:

- In partnership with the American Forestry Association, the International Society of Arboriculture, and the Sinus Gateway, the Forest Service provided funding to establish a National Urban Forestry Information System for use by urban forestry practitioners at the State and local levels.
- The Arbor Day Foundation, in partnership with the Forest Service, presented 1,034 "Tree City USA" awards to communities for their commitment to tree planting and maintenance.

Arbor Day in Boston. School children receive take home trees.

- "Neighborwoods", in Chicago, has been ongoing for the last three years, and is an example of focused feeral assistance. The program has six components: advocacy, public education, recycling, tree care, tree planting, and youth training and employment. Accomplishments included "Do It Yourself Urban Forestry" workshops; tree planting in the Hispanic community, Little Village; public awareness announcements for Arbor Day; citywide recycling of used Christmas Trees; open space boulevard replanting; and urban park development.

FY 1991 begins the decade of the 90's with several major challenges for the Urban and Community Forestry Program. Program activities will be designed to strengthen the USDA Forest Service's "traditional" urban forestry program by encouraging an integrated approach to managing forest resources in communities. The program will provide technical and financial assistance to efforts which take into account not only the trees themselves but also the related resources including urban wildlife and biodiversity, aesthetics and recreation, and water and air quality.

The assistance would support and expand the technical knowledge base available to cities and towns and expand local capabilities to more effectively integrate community forest management into the social, economic, and environmental goals and objectives of the community.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Urban forestry	$	2,886	2,000	-886
	FTE	7	5	-2

A decrease of $886,000 is proposed from the 1991 base.

This program level provides limited federal funding for technical and finanical assistance to States for urban and community forestry program activities. It allows for coordination of urban and community forestry program activities at the national and regional levels. It limits progress in implementing recommendations in the 1987 President's Commission Report on Americans Outdoors, and in the 1988 Urban Forestry Assessment ("Forestry-A Community Tradtion"). States and cities may choose to increase their level of support for these activities within their own priorities and budget.

Object class information

Salaries and benefits	-80
Travel	-7
Other services	-32
Grants, subsidies, and contributions	-767
Total	-886

Special Projects

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec.(-) from Base
			(Dollars in thousands)			
Boundary Waters Canoe Area.......................... $	2,800	3,000	2,964	0	0	0
Pinchot Institute for Conservation Studies.................$	200	200	198	198	0	-198
FTE	1	1	1	1	0	-1
Lake Tahoe (P.L. 96-586)..............................$	1,400	1,400	1,383	1,383	0	-1,383
FTE	1	0	0	0	0	0
Tropical Forestry.........................$	0	2,500	2,470	2,470	0	-2,470
FTE	0	1	1	1	0	-1
Centennial Trail – Washington.............................. $	3,600	3,600	3,557	0	0	0
Centennial Trail – Idaho...$	1,350	0	0	0	0	0
Grant to Arbor Day...................... $	0	6,000	5,928	0	0	0
Two Forks Resource Analysis – Colorado................ $	75	0	0	0	0	0
Timber Bridge Initiative.............$	2,700	2,700	2,668	2,668	0	-2,668
FTE	3	3	3	3	0	-3
Economic Diversification Studies.......................................$	500	500	495	495	0	-495
FTE	1	1	1	1	0	-1
New England Timber Resource Analysis.................... $	250	0	0	0	0	0
Total Special......................... $	12,875	19,900	19,663	7,214	0	-7,214
FTE	6	6	6	6	0	-6

General

Special projects involve activities to accomplish specialized objectives usually not available through other Forest Service programs. This includes activities such as water pollution control and mitigation of soil erosion in the Lake Tahoe Basin.

Boundary Waters Canoe Area

Objective

To provide technical and financial assistance to the State of Minnesota in implementing the Boundary Waters Canoe Area Wilderness legislation.

Program description

Federal funds are transferred to the State of Minnesota for an intensive forest management program on State, county, and private lands.

Under Section 6 of P.L. 95-495, intensive forest management activities are concentrated in the five northeastern Minnesota counties of Lake, Cook, St. Louis, Koochiching, and Carlton to help sustain and increase the yield of softwood timber. Authority for this grant expired at the end of FY 1990.

In FY 1989, Federal funding was $2.8 million and State funding was $750 thousand. Program accomplishments in FY 1989, and planned accomplishments in FY 1990:

		FY 1989 (Actual)	FY 1990 (Planned)	FY 1991 (Expired)
Reforestation	(acres)	25,780	20,500	0
Timber stand improvement	(acres)	2,631	2,700	0
Road maintenance and improvement	(miles)	508	640	0
Seedling production	(million seedlings)	21	20	0

Since the authorizing legislation expired at the end of FY 1990, no funding or accomplishments are proposed for FY 1991.

Pinchot Institute for Conservation Studies

Objective

To serve as a center for discussing natural resource issues of national and regional importance, and to seek solutions for these issues in the pre-conflict stage. To provide information for increasing awareness about natural resource conservation. To manage Grey Towers National Historic Landmark as a unique cultural and historic resource for interpreting the development of American forestry and natural resource conservation.

Program description

The Pinchot Institute for Conservation Studies is a special unit of the Forest Service located at Grey Towers National Historic Landmark in Milford, Pennsylvania. Grey Towers was the home of Gifford Pinchot, pioneer conservationist, founder and first Chief of the Forest Service, and Governor of Pennsylvania. The Forest Service is assisted in its efforts to preserve Grey Towers and operate the Pinchot Institute by the National Friends of Grey Towers. The Board of Directors of Friends recently appointed a full time Executive Director to lead efforts in further development of Institute programs.

As a site for informal thought, scholarship, and issue resolution, Grey Towers hosts several regional and national meetings related to natural resource management. Clients include the Forest Service, National Park Service, the National Council of State Garden Clubs, extension leaders, economic development groups, and university professors. Grey Towers also serves numerous visitors through interpretive tours and conservation education programs.

Some key activities in FY 1989:

- A Community Conservation Seminar series was begun. Private developers and realtors, along with environmentalists, community planners and multi-government agencies worked together to integrate sound environmental and social practices into rural-urban interface community development plans.
- A partnership effort with the Library of Congress to organize the Pinchot papers in the Library's manuscript division. These papers included correspondence of Pinchot and early conservationists which dealt with the foundation of the early conservation movement. Researchers have catologed many of these papers and can use the concepts in future publications.

The Northeastern Area, State and Private Forestry, administers the Pinchot Institute and Grey Towers, with funding provided by benefiting Forest Service appropriations. Congress provided an additional $200,000 in FY 1989 and $198,000 in FY 1990.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Pinchot Institute..........$	198	0	-198
FTE	1	0	-1

A decrease of $198,000 is proposed from the 1991 base.

Funding to maintain operations and programs at the Pinchot Institute will be provided from other Forest Service appropriations.

Object class information

Salary and benefits....................	-35
Other services..........................	-163
Total..................................	-198

Lake Tahoe (P.L. 96-586)

Objective

To control water pollution and mitigate soil erosion on non-Federal lands within the Lake Tahoe Basin.

Program description

Program funding levels are based on amounts appropriated for land acquisition within the Lake Tahoe Basin, to implement Section 2(g) of P.L. 96-586. The funds are used for soil erosion activities and control of water pollution on non-Federal lands within the Lake Tahoe Basin in both California and Nevada. These special project funds are targeted for State, county, and private lands.

The Forest Service (Lake Tahoe Basin Management Unit) has established a process for distributing Burton-Santini funds by project to local governments in California and Nevada. Each county's share is based on the amount of National Forest System land which has been acquired under the Burton-Santini Act, P.L. 96-586. Projects within a county are selected by a committee of governmental agencies, and local organizations. The committee reviews each project and selects those which effectively meet the goals of the Act.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Lake Tahoe	$ 1,383	0	-1,383

A decrease of $1,383,000 is proposed from the 1991 base.

This will discontinue financial assistance to local jurisdictions for soil erosion activities and water pollution control efforts on non-Federal lands within the Lake Tahoe Basin.

Object class information

Grants, subsidies and contributions	-1,383
Total	-1,383

Tropical Forestry Initiative

Objective

To begin implementation of the Forest Service's tropical forestry action plans.

Program description

The overall goal of the plan is to assist national forestry and related agencies in developing countries, international organizations, and nongovernmental organizations in reducing tropical deforestation. The Forest Service will provide assistance in managing, using, and protecting vital tropical forest resources.

In FY 1990, Congress included $2.47 million: $1.087 million for technical assistance, $1.235 million for training, and $148,212 for support to international organizations.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Tropical forestry initiative	$	2,470	0	-2,470
	FTE	1	0	-1

Technical assistance, training, and support to international organizations will be discontinued.

Object class information

Salary and benefits	-60
Travel	-600
Printing and reproduction	-250
Other services	-190
Supplies, materials and equipment	-125
Grants, subsides, and contributions	-1,245
Total	-2,470

Centennial Trails, Washington and Idaho

Objective

To construct a trail from Spokane, Washington, to Lake Coeur d'Alene, Idaho.

Program description

The FY 1989 Appropriations Act provided $3,600,000 for a grant to the Washington State Parks and Recreation Commission for one-half of the funding needed for construction of the Spokane River Centennial Trail in the State of Washington. The Act also provided $1,350,000 for a grant to Kootenai County, Idaho, for construction of the Idaho Centennial Trail.

In FY 1990, Congress provided $3,557,000 for the second and final year for funding to complete the Spokane River Centennial Trail.

No funding is proposed for FY 1991.

Grant to Arbor Day Foundation

Objective To grant $5.9 million to the National Arbor Day Foundation for the National Arbor Day Center.

Program description In FY 1990, Congress provided $5.9 million for a one time grant to the National Arbor Day Foundation for cost-sharing in the construction of a national education and conference center. The center will provide for continuing education, professional development, and conference programs on urban and community forestry and related issues. The National Arbor Day Foundation is required to match the appropriated amount with private funds.

No funds are proposed for FY 1991.

Two Forks, Colorado

Objective

To enable a review of resource impacts, alternatives, and options on the proposed Two Forks project on the South Platte River.

Program description

In FY 1989, Congress provided $75,000 for one time financial assistance to review management options and their impacts for that part of the South Platte River that would be affected by the proposed Two Forks Dam and Reservoir.

No funds were appropriated in FY 1990, and none are proposed in FY 1991

Timber Bridge Initiative

Objective

To expand markets for timber bridges on rural and secondary roads.

Program description

In FY 1990, Congress provided $2 million for continuation of the demonstration bridge projects, and $668,000 for operations, technical assistance, and outreach programs conducted by the Timber Bridge Information Resource Center. This program is geared to address the need for safe, affordable, short to medium span bridges throughout the country to help bring our rural road system up to current traffic requirements. Demonstrating the use of underutilized local hardwood resources will stimulate rural economies. This program will finance demonstration bridges, modern bridge technology transfer projects, and conferences.

The proportion of program funds made available to each State is based on submitted projects. Financial assistance amounts are based on the established timber bridge criteria, such as: design, structural integrity, opportunities for increasing local employment, use of local species, and geographical distribution.

A modern timber bridge was installed on a secondary road to demonstrate the latest bridge technology and its many advantages over competitive materials.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Timber Bridge Initiative	$	2,668	0	-2,668
	FTE	3	0	-3

A decrease of $2,668,000 is proposed from the 1991 base.

The Timber Bridge Information Center will be closed and technical assistance to State and local government will be discontinued. The monitoring of bridge design and demonstration bridges will be discontinued.

Object class information

Salaries and benefits	-124
Travel	-10
Rent, communications, and utilities	-27
Supplies, materials, and equipment	-25
Other services	-506
Grants, subsidies, and contributions	-1,976
Total	-2,668

Economic Diversity

Objective

To encourage local communities to diversify their local economies.

Program description

In FY 1990, Congress provided $495,000 for the continuation of the economic diversification projects. These projects were targeted for communities or regions where mills, wells, or mines were closing because their natural resources, such as timber, oil, gas, or coal, had been depleted. Participating communities cost shared these projects that developed alternative employment opportunities which helped to stabilize their local employment base.

General guidelines for the development and selection of proposals include: economic need, relationship to Forest Service activities and programs, feasibility and practicality, and contributing matching funds or in-kind services.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Economic diversification studies. . . .	$	495	0	-495
	FTE	1	0	-1

A decrease of $495,000 is proposed from the 1991 base.

No economic diversification projects will be proposed in 1991.

Object class information

Salaries and benefits.	-26
Grants, subsidies, and contributions.	-469
Total	-495

New England Timber Resource Analysis

Objective

To document the resources and changes in the northern forest lands of Maine, New Hampshire, Vermont, and New York. To develop comprehensive strategies to conserve these lands and the natural resource economy.

Program description

The FY 1989 Appropriations Act provided one time financial assistance of $250,000 to be used to conduct a study of the timberland resources ir New York, Vermont, New Hampshire, and Maine. The States provided matching funds. The draft report was sent to the public for review in October, 1989. A final report will be sent to Congress in March, 1990.

No funding was provided in FY 1990. No funding is proposed for FY 1991.

State and Private Forestry Financial Assistance, by State
FY 1989 - Actual
(Dollars in thousands)

		FPM	Fire	FM&U	Special Projects	Total
Alabama	$	807	270	130	30	1,237
Alaska	$	35	187	67	30	319
Arizona	$	24	65	38	0	127
Arkansas	$	63	243	82	0	388
California	$	144	732	108	1,270	2,254
Colorado	$	43	269	77	80	469
Connecticut	$	0	52	38	0	90
Delaware	$	195	49	15	0	259
District of Columbia	$	8	0	0	30	38
Florida	$	60	330	133	0	523
Georgia	$	107	317	175	18	617
Guam	$	11	49	28	0	88
Hawaii	$	28	69	25	0	122
Idaho	$	175	199	66	1,495	1,935
Illinois	$	30	103	108	0	241
Indiana	$	32	68	107	30	237
Iowa	$	26	54	30	30	140
Kansas	$	19	152	78	30	279
Kentucky	$	0	217	98	0	315
Louisiana	$	159	274	85	23	541
Maine	$	65	227	90	29	411
Maryland	$	1,949	147	71	30	2,197
Massachusetts	$	31	144	77	0	252
Michigan	$	557	278	63	48	946
Minnesota	$	132	209	123	2,847	3,311
Mississippi	$	36	281	115	30	492
Missouri	$	49	260	99	30	438
Montana	$	35	225	77	108	445
Nebraska	$	18	148	69	30	265
Nevada	$	25	118	80	200	423
New Hampshire	$	61	101	80	0	242
New Jersey	$	451	182	54	0	687
New Mexico	$	15	129	42	50	236
New York	$	55	257	74	25	411
North Carolina	$	253	297	201	25	776
North Dakota	$	15	61	60	30	166
Ohio	$	40	155	76	0	271
Oklahoma	$	30	150	99	0	279
Oregon	$	59	302	140	70	571
Other Pacific Islands	$	16	0	54	0	70
Pennsylvania	$	1,859	284	130	150	2,423
Puerto Rico	$	0	49	45	0	94
Rhode Island	$	16	50	37	0	103
South Carolina	$	188	284	90	14	576
South Dakota	$	18	207	65	0	290
Tennessee	$	54	254	105	0	413
Texas	$	552	236	106	0	894
Utah	$	62	108	53	25	248
Vermont	$	214	49	65	30	358
Virgin Islands	$	0	25	0	0	25
Virginia	$	1,929	285	169	0	2,383
Washington	$	62	302	90	3,655	4,109
West Virginia	$	1,446	160	70	1,020	2,696
Wisconsin	$	56	273	63	47	439
Wyoming	$	99	127	57	75	358
Total, States	$	12,443	10,063	4,377	11,634	38,517

State and Private Forestry Financial Assistance, by State
FY 1990 - Estimate
(Dollars in thousands)

		FPM	Fire	FM&U	Special Projects	Total
Alabama	$	87	271	155	0	513
Alaska	$	34	188	92	0	314
Arizona	$	34	65	63	0	162
Arkansas	$	66	244	107	0	417
California	$	60	734	134	1,186	2,114
Colorado	$	43	271	102	0	416
Connecticut	$	0	52	63	0	115
Delaware	$	17	49	40	0	106
District of Columbia	$	18	0	25	0	43
Florida	$	63	332	158	0	553
Georgia	$	107	318	200	0	625
Guam	$	20	49	53	0	122
Hawaii	$	30	69	50	0	149
Idaho	$	41	200	91	0	332
Illinois	$	30	104	133	0	267
Indiana	$	31	68	132	0	231
Iowa	$	23	54	55	0	132
Kansas	$	19	152	103	0	274
Kentucky	$	0	218	123	0	341
Louisiana	$	63	275	110	0	448
Maine	$	76	227	115	0	418
Maryland	$	29	147	96	0	272
Massachusetts	$	19	144	102	0	265
Michigan	$	67	280	88	0	435
Minnesota	$	61	209	148	2,964	3,382
Mississippi	$	66	283	140	0	489
Missouri	$	51	261	123	0	435
Montana	$	35	226	102	0	363
Nebraska	$	19	148	94	0	261
Nevada	$	30	119	105	197	451
New Hampshire	$	38	102	105	0	245
New Jersey	$	24	183	79	0	286
New Mexico	$	35	129	67	0	231
New York	$	55	258	99	0	412
North Carolina	$	87	298	226	0	611
North Dakota	$	15	61	85	0	161
Ohio	$	40	156	101	0	297
Oklahoma	$	33	150	124	0	307
Oregon	$	77	304	165	0	546
Other Pacific Islands	$	23	0	79	0	102
Pennsylvania	$	71	286	155	0	512
Puerto Rico	$	0	49	70	0	119
Rhode Island	$	19	50	62	0	131
South Carolina	$	57	286	115	0	458
South Dakota	$	18	207	90	0	315
Tennessee	$	54	255	130	0	439
Texas	$	63	237	131	0	431
Utah	$	20	109	78	0	207
Vermont	$	31	49	90	0	170
Virgin Islands	$	0	25	25	0	50
Virginia	$	1,401	288	194	0	1,883
Washington	$	76	304	115	3,557	4,052
West Virginia	$	948	161	95	988	2,192
Wisconsin	$	58	274	88	0	420
Wyoming	$	13	128	82	0	223
Total, States	$	4,495	10,106	5,752	8,892	29,245 0
Suppression available for Coop lands	$	10,123 1/	0	5,851 2/	2,702 2/	18,676 0
Total, State Grants	$	14,618	10,106	11,603	11,594	47,921

1/ State distribution not available at this time. Includes $4.0 million AIPM funds.

2/ Distribution will be determined on a project by project basis.

State and Private Forestry Financial Assistance, by State
FY 1991 - Estimate
(Dollars in thousands)

		FPM	Fire	FM&U	Special Projects	Total
Alabama	$	89	0	0	0	89
Alaska	$	71	0	0	0	71
Arizona	$	49	0	0	0	49
Arkansas	$	100	0	0	0	100
California	$	128	0	0	0	128
Colorado	$	41	0	0	0	41
Connecticut	$	28	0	0	0	28
Delaware	$	16	0	0	0	16
District of Columbia.	$	17	0	0	0	17
Florida	$	115	0	0	0	115
Georgia	$	110	0	0	0	110
Guam	$	19	0	0	0	19
Hawaii	$	29	0	0	0	29
Idaho	$	82	0	0	0	82
Illinois	$	29	0	0	0	29
Indiana	$	63	0	0	0	63
Iowa	$	28	0	0	0	28
Kansas	$	21	0	0	0	21
Kentucky	$	0	0	0	0	0
Louisiana	$	60	0	0	0	60
Maine	$	147	0	0	0	147
Maryland	$	31	0	0	0	31
Massachusetts	$	58	0	0	0	58
Michigan	$	140	0	0	0	140
Minnesota	$	108	0	0	0	108
Mississippi	$	63	0	0	0	63
Missouri	$	99	0	0	0	99
Montana	$	34	0	0	0	34
Nebraska	$	24	0	0	0	24
Nevada	$	30	0	0	0	30
New Hampshire	$	40	0	0	0	40
New Jersey	$	28	0	0	0	28
New Mexico	$	35	0	0	0	35
New York	$	53	0	0	0	53
North Carolina	$	112	0	0	0	112
North Dakota	$	14	0	0	0	14
Ohio	$	38	0	0	0	38
Oklahoma	$	54	0	0	0	54
Oregon	$	117	0	0	0	117
Other Pacific Islands	$	24	0	0	0	24
Pennsylvania	$	122	0	0	0	122
Puerto Rico	$	0	0	0	0	0
Rhode Island	$	24	0	0	0	24
South Carolina	$	55	0	0	0	55
South Dakota	$	17	0	0	0	17
Tennessee	$	52	0	0	0	52
Texas	$	171	0	0	0	171
Utah	$	38	0	0	0	38
Vermont	$	87	0	0	0	87
Virgin Islands	$	0	0	0	0	0
Virginia	$	113	0	0	0	113
Washington	$	110	0	0	0	110
West Virginia	$	95	0	0	0	95
Wisconsin	$	56	0	0	0	56
Wyoming	$	29	0	0	0	29
Subtotal, States	$	3,313	0	0	0	3.313
Undistributed	$	0	0	4,517	0	4.517
Total State Grants	$	3,313	0	4,517	0	7.830

STATE AND PRIVATE FORESTRY

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-1105-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Forest pest management	40,542	57,377	41,692
	2. Fire protection	14,687	16,994	4,011
	3. Forest management and utilization	10,664	22,660	10.914
	4. Special projects	11,035	19,663	0
	Total direct program	76,928	116.694	56,617
	Reimbursable program	6,038	11.939	5,000
10.00	Total obligations	82,966	128.633	61,617
	Financing:			
	Offsetting collections from:			
11.00	Federal funds	-5,309	-10.551	-4,396
14.00	Non-Federal sources	-729	-1,449	-604
21.40	Unobligated balance available, start of year	-6,855	-16.446	0
22.40	Unobligated balance tranferred, net	0	4.000	0
24.40	Unobligated balance available, end of year	16,446	0	0
25.00	Unobligated balance lapsing	149	0	0
27.00	Reduction pursuant to P.L. 99-177	0	61	0
39.00	Budget authority	86,668	104.248	56,617
	Budget authority:			
40.00	Appropriation	86,668	105.506	56,617
40.00	Reduction pursuant to P.L. 99-177	0	-1.258	0
43.00	Appropriation (adjusted)	86,668	104.248	56,617
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	76,928	116,633	56,617
72.40	Obligated balance, start of year	31,932	39,644	55,751
74.40	Obligated balance, end of year	-39,644	-55,751	-51,287
90.00	Outlays	69,216	100,526	61,081

STATE AND PRIVATE FORESTRY

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-1105-0-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	13,920	14,897	14.308
11.3	Other than full-time permanent	2,386	2.321	1.995
11.5	Other personnel compensation	513	530	491
11.8	Special personal services payments	2	0	0
11.9	Total personnel compensation	16,821	17,748	16,794
	Personnel benefits:			
12.1	Civilian	3,112	3,587	3.386
13.0	Benefits for former personnel	53	52	45
21.0	Travel and transportation of persons	2,696	5,509	1.163
22.0	Transportation of things	426	870	184
23.1	Rental payments to GSA	899	701	691
23.2	Rental payments to others	111	227	48
23.3	Communications, utilities, and miscellaneous charges	530	1,083	229
24.0	Printing and reproduction	316	646	136
25.0	Other services	12,431	25,401	5,360
26.0	Supplies and materials	1,194	2,441	515
31.0	Equipment	1,000	2,043	431
32.0	Land and structures	2	4	1
41.0	Grants, subsidies, and contributions	36,356	55,340	26,677
42.0	Insurance claims and indemnities	18	37	8
44.0	Refunds	31	65	0
99.0	Subtotal, direct obligations	75,996	115,754	55,668
99.0	Reimbursable obligations	6,038	11,939	5,000

Obligations are distributed as follows:			
State and Private Forestry, Agriculture	82,034	127,693	60,668
National Park Service, Interior	346	350	355
Bureau of Land Management, Interior	142	142	142
U.S. Fish and Wildlife Service, Interior	32	32	32
Bureau of Indian Affairs, Interior	412	416	420
Total obligations	82,966	128,633	61,617

STATE AND PRIVATE FORESTRY

PERSONNEL SUMMARY

Identification code: 12-1105-0-1-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	414	433	380
Total compensable workyears:			
Full-time equivalent employment	557	583	536
Full-time equivalent of overtime and holiday hours	20	20	14
Average ES salary	$75,500	$78,200	$97,800
Average GS grade	11.74	11.74	11.74
Average GS salary	$34,816	$35,756	$36,983
Average salary of ungraded positions	$32,065	$32,931	$34,061
Reimbursable:			
Total number of full-time permanent positions	12	13	13
Total compensable workyears:			
Full-time equivalent employment	16	17	17
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	12.83	12.83	12.83
Average GS salary	$42,813	$43,952	$45,395
Allocation Accounts:			
Total number of full-time permanent positions	1	1	1
Total compensable workyears:			
Full-time equivalent employment	10	10	10
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	11.35	11.35	11.35
Average GS salary	$31,429	$32,857	$33,385

Forest
Service

National Forest System

		1990 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from base
				(Dollars in thousands)				
Minerals area management	$	28,439	28,726	28,414	29,713	28,015	-399	-1,698
	FTE	487	508	508	508	489	-19	-19
Real estate management	$	20,503	26,280	25,973	27,179	30,037	+4,064	+2,858
	FTE	544	559	559	559	575	+16	+16
Land line location	$	28,676	29,304	28,885	30,195	28,394	-491	-1,801
	FTE	440	468	468	468	450	-18	-18
Maintenance of facilities	$	17,883	19,102	18,893	20,007	23,352	+4,459	+3,345
	FTE	283	296	296	296	314	+18	+18
Forest fire protection	$	189,616	0	0	0	0	0	0
Firefighting	$ 1/	0	178,139	176,192	184,326	179,189	2,997	- 5,137
	FTE	3,800	0	0	0	0	0	0
Fighting forest fires	$	378,000	0	0	0	0	0	0
Firefighting	$ 1/	0	383,000	378,812	137,070	118,660	- 260,152	- 18,410
Cooperative law enforcement	$	10,815	11,205	11,082	11,563	17,085	+6,003	+5,522
	FTE	75	75	75	75	75	0	0
Forest road maintenance	$	80,728	96,886	95,827	100,117	91,230	-4,597	-8,887
	FTE	1,123	1,284	1,284	1,284	1,200	-84	-84
Forest trail maintenance	$	30,787	24,044	23,781	24,907	23,854	+73	-1,053
Resource management, timber receipts	$	5,850	0	0	0	0	0	0
	FTE	567	612	612	612	590	-22	-22
Timber sales admin. and mgmt.	$	207,336	253,723	250,949	262,577	248,836	-2,113	-13,741
Resource management, timber receipts	$	29,252	0	0	0	0	0	0
	FTE	4,482	5,266	5,266	5,266	5,005	-261	-261
Reforestation and stand improvement	$	65,285	68,182	67,436	71,793	59,791	-7,645	-12,002
Reforestation trust fund	$	31,171	30,000	30,000	30,000	30,000	0	0
Resource management, timber receipts	$	9,751	0	0	0	0	0	0
	FTE	972	1,008	1,008	1,008	900	-108	-108

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from base
				(Dollars in thousands)				
Recreation use	$	142,254	152,724	151,054	158,091	184,224	+33,170	+26,133
Resource management, timber receipts	$	9,750	0	0	0	0	0	0
Operation and maintenance of recreation facilities	$	0	0	0	0	9,084	+9,084	+9,084
	FTE	3,123	3,354	3,354	3,354	3,546	+192	+192
Wildlife and fish habitat management	$	84,894	81,500	80,609	84,283	84,252	+3,643	-31
Resource management, timber receipts	$	19,501	0	0	0	0	0	0
	FTE	1,238	1,399	1,399	1,399	1,402	+3	+3
Range management	$	30,567	33,331	32,966	34,693	38,338	+5,372	+3,645
Range betterment fund	$	3,946	4,700	4,643	4,643	4,578	-65	-65
	FTE	641	659	659	659	670	+11	+11
Soil, water, and air management	$	42,704	50,328	49,778	52,019	60,685	+10,907	+8,666
Resource management, timber receipts	$	19,501	0	0	0	0	0	0
	FTE	680	731	731	731	754	+23	+23
General administration	$	272,116	274,015	271,019	283,475	293,450	+22,431	+9,975
	FTE	5,200	5,200	5,200	5,200	5,240	+40	+40
Reappropriation of 1988 unobligated balances	$	5,917	0	0	0	0	0	0
Total	$	1,585,005	1,149,232	1,136,666	1,190,612	1,211,543	+74,877	+20,931
	FTE 2/	23,463	21,417	21,417	21,417	21,210	-207	-207
Other Funds:								
Firefighting	$ 1/	0	561,139	555,004	321,396	297,849	-257,155	-23,547
Resource management, timber receipts	$ 3/	97,505	0	0	0	0	0	0
Reforestation trust fund	$ 4/	31,171	30,000	30,000	30,000	30,000	0	0
Operation and maintenance of recreation facilities	$ 5/	0	0	0	0	9,084	+9,084	+9,084
Range betterment fund	$ 6/	3,946	4,700	4,643	4,643	4,578	-65	-65
Total, All Funds	$	1,717,827	1,745,071	1,726,313	1,546,651	1,553,054	-173,259	+6,403

1/ See Firefighting appropriation for description.
2/ FTEs displayed are for NFS only.
3/ See Other Appropriations section for description of Resource Management, Timber Receipts appropriation.
4/ See Trust Funds section for description of Reforestation Trust Fund appropriation.
5/ See Other Appropriations section for description of Operation and Mainatenance of Recreation Facilities appropriations.
6/ See Other Appropriations section for description of Range Betterment Fund appropriation.

Authorities

The Act of June 4, 1897, Organic Administration Act of 1897, as amended (16 U.S.C. 473-478, 479-482, 551). Section 24.
Administration, protection, and management of the National Forests.
Such sums as appropriated; no expiration date.

P.L. 68-575, The Act of March 3, 1925, as amended (16 U.S.C. 555). Section 5.
Purchase of land and acceptance of donations of land.
Such sums as necessary, not to exceed $50,000 per fiscal year; no expiration date.

P.L. 75-210, Title III, The Bankhead-Jones Farm Tenant Act of July 22, 1937, as amended (7 U.S.C. 1010, 1011). Sections 31 and 32.
Land acquisition, exchange, and authorities to correct maladjustments for land utilization purposes.
Such sums as necessary; no expiration date.

P.L. 78-412, Department of Agriculture Organic Act of September 21, 1944 (7 U.S.C. 2250). Section 703.
Erect, alter, and repair buildings necessary to carry out authorized work.
Section 205 (16 U.S.C. 579(a)).
Procure and provide aerial operations and facilities, including equipment and structures.

P.L. 81-348, Act of October 11, 1949 (Anderson-Mansfield Reforestation and Revegetation Act) (16 U.S.C. 581j-k). Sections 1 and 2.
Reforestation and range revegetation.
Such sums as needed; no expiration date.

P.L. 84-979, The Act of August 3, 1956 (7 U.S.C. 428a). Section 11.
Land or interests in land by purchase, exchange, or otherwise.
Such sums specified by annual appropriation; no expiration date.

P.L. 88-657, Act of October 13, 1964, National Forest Roads and Trails Systems Act (16 U.S.C. 532-538). Sections 1-7.
Construction and maintenance of forest roads and trails.
Such sums as appropriated; no expiration date.

P.L. 89-106, The Act of August 4, 1965 (7 U.S. C. 2250a). Section 1.
Erection and leasing of buildings, structures, and land from non-Federal sources.
Such sums as appropriated; no expiration date.

P.L. 90-542, Wild and Scenic Rivers Act of October 2, 1968 (16 U.S.C. 1271-1287).
National wild and scenic rivers system components.

P.L. 90-543, National Trails System Act of 1968, as amended by P.L. 98-11 (16 U.S.C. 1241 et. seq.). Section 10.
Construction and maintenance of trails. Assistance to volunteer organizations.
Such sums as appropriated; no expiration date.

P.L. 90-583, Carlson-Foley Act of 1968 (43 U.S.C. 1241-1243). Section 3.
Rangeland management; noxious farm weed control.
Such sums as appropriated; no expiration date.

P.L. 92-82, Sisk Act of August 10, 1971 (16 U.S.C. 551(a)).
Cooperation with States and Political Subdivisions for reimbursement of State and local law enforcement on National Forest Lands.
Such sums as appropriated; no expiration date.

P.L. 93-378, Forest and Rangeland Renewable Resources Planning Act, August 17, 1974, as amended (16 U.S.C. 1601 note). Sections 2-5.
Forest resources planning and evaluation.
Such sums as appropriated; no expiration date.

P.L. 94-588, National Forest Management Act of 1976, October 22, 1976 (16 U.S.C. 472(a-i) and 1601). Sections 1-14.
Amends Forest and Rangeland Renewable Resources Planning Act of 1974.
Such sums as appropriated; no expiration date.
Reforestation - $200,000 annually (16 U.S.C. 1601(d)(3)).

P.L. 95-495, Act of October 21, 1978 (92 Stat. 1649). Sections 5(d), 11(f), and 18(e).
Establishes the Boundary Waters Canoe Area Wilderness and Boundary Waters Canoe Area Mining Protection Area.
Sections 5(d), 11(f), and 18(e).
Such sums as necessary.

P.L. 96-586, Act of December 23, 1980.
Prevent, control, and mitigate water pollution, and manage National Forest System lands acquired within the Lake Tahoe Basin.
Authorization is 5 percent of the Land and Water Conservation Fund appropriation for Lake Tahoe Basin land acquisitions each year.
Expires when all Clark County, Nevada, land specified in the Act is sold by the U.S. Department of Interior, Bureau of Land Management.

P.L. 97-465, Act of January 22, 1983 (16 U.S.C. 521c).
To authorize the conveyance of lands and other purposes; land exchange and sales.
Such sums as necessary; no expiration date.

P.L. 99-570, Anti-Drug Abuse Act of 1986, Title XV, October 27, 1986, as amended by the Anti-Drug Abuse Act of 1988.

Authorize Secretary of Agriculture to prevent and control drug abuse on the National Forest System, including investigative powers beyond the exterior boundaries of National Forest System lands. $10,000,000 annually; no expiration date.

P.L. 100-409, Federal Exchange Facilitation Act of 1988, August 20, 1988. Section 4.

Funds to consider, process, and consummate land exchanges pursuant to the Federal Land Policy and Management Act of 1976. Amount not to exceed $4,000,000 annually.

Appropriation Summary Statement

This appropriation provides funds for the protection, management, and utilization of about one-third of all Federal land in the United States: 191 million acres of the National Forest System (NFS) located in 44 States, Puerto Rico, and the Virgin Islands. The NFS is a national resource that generates over $1.5 billion in receipts and has a major environmental and social value for millions of Americans. More than 25 percent of the receipts for goods and services from these lands is returned under current laws to the States and counties. This amounted to an estimated $370 million for FY 1989.

Following are examples of the contribution of NFS lands to the well being of the American people.

- Outdoor recreation. The NFS lands are truly "America's Great Outdoors." Each year they provide the setting for almost 40 percent of all outdoor recreation use on Federal lands. The forests provided 252.5 million recreation-visitor-days in FY 1989. Among the facilities and areas available to the public are: more than 5,800 campgrounds and picnic areas; visitor information centers; downhill and cross-country ski areas; 108,400 miles of trails which includes National Scenic Trails and National Recreation Trails; National Recreation Areas and National Wild and Scenic Rivers; and the National Wilderness Preservation System.

  A below-cost timber sales test is proposed. This proposal would test whether the local economic effects of eliminating certain below-cost timber sales can be offset by increasing recreation activities and funding. The test also includes a legislative proposal to permit increased recreation fees to offset the decrease in timber revenues shared with the counties and to increase revenues for additional expansion of recreation activities.

  The National Recreation Strategy, begun in FY 1988, was designed to emphasize the improvement of customer service and satisfaction, formation of partnerships with others, and increased interpretation and environmental education. An integral component of the National Recreation Strategy is the challenge cost-share program which encourages the public, both nonprofit and profit entities, to become partners with the Forest Service in recreation projects on the national forests.

- Wildlife and fish management. NFS lands are a favorite place for millions of Americans to hunt and fish. In cooperation with the States, Forest Service management improves wildlife and fish habitat to provide for both commercial and noncommercial uses.

The waters on NFS lands provide Americans with millions of days and dollars worth of sport and commercial fishing—vital resources for our Nation's economies and lifestyles. Fishing demands are expected to nearly double over the next five decades. The "Rise to the Future" fisheries program is designed to meet these rising demands through the protection, restoration, and improvement of fish habitats, thereby increasing fishing opportunities in the national forests.

Through the challenge cost-share program, more than 500 partners donated over $6 million and cooperated with the Forest Service to complete habitat improvement projects on national forests and grasslands during FY 1989. We expect the number of cooperators to continue to grow in future years.

- Range management. Emphasis is placed on the management of range vegetation to improve riparian areas in unsatisfactory condition; improve declining range condition due to overstocking; and maintain or enhance water quality and quantity, soil productivity and stability, wildlife and endangered and threatened habitats, and recreation opportunities. Range vegetation is also managed to provide forage for domestic livestock, wildlife, and wild horses and burros. In FY 1989, more than 12,000 ranchers and farmers were authorized to graze 9.8 million animal unit months on the 50 million acres of suitable range within NFS grazing allotments. Many of these permittees are dependent on NFS lands to complement their livestock ranching operations. The Forest Service will continue to provide opportunities to the public for economic diversity and stability for those communities dependent upon range resources.

- Soil, water, and air. Much of the Nation's water supply flows from NFS lands located in the headwaters of the major river systems. In the 16 Western States, where the water supply is critical for sustaining current populations and supporting future growth, approximately 55 percent of the total annual water yield is from NFS lands. Nationwide, healthy watershed conditions on NFS lands are critical to continued production of goods and services, including favorable waterflows. Site specific practices are used to ensure that desired watershed conditions are maintained or enhanced during management activities. The important components of a watershed are riparian areas and wetlands. Those areas will receive special emphasis in FY 1991 for protection and improvement.

Soil inventories are completed to provide information on the capability of soils to support management activities. About six million acres were inventoried in FY 1989. The Forest Service also conducts programs to improve the productivity of soil and water resources; 15,057 acres were improved in FY 1989.

The Forest Service is responsible for managing resources and activities in compliance with requirements of the Clean Air Act. This involves maintaining air quality at or above established standards and protecting air quality-related values from damage resulting from air pollution, particularly in 88 federally designated class I (wilderness) areas. In FY 1989, the Forest Service reviewed 19 preconstruction permits for private sector development in order to manage the air resource under the prevention of significant deterioration program.

Over 30 emergency fire assessments for emergency burn rehabilitation were prepared in FY 1989, with over $4 million approved for emergency recovery work on 175,000 acres. The initial emergency work to stabilize soils and minimize runoff to protect water quality has been completed. Followup monitoring and maintenance work will be necessary to prevent damage and flooding from the fall and winter storms.

- Wood products. About 28 percent of the Nation's annual softwood sawtimber harvest was from NFS lands in FY 1989. Softwood sawtimber is essential to produce the lumber and plywood needed to construct homes and buildings, as well as other wood products. NFS lands contain over 47 percent of the Nation's standing softwood sawtimber inventory; thus, they will continue to play a vital role in meeting the Nation's wood product needs in the upcoming decades. Enough wood is sold from NFS lands to annually build over one million homes. It is well within the capacity of the national forests to produce timber on a sustained yield basis in an environmentally sound manner. Reforestation and timber stand improvement activities are carried out to sustain a high level of productivity.

- Minerals. About one-fourth of the Nation's potential domestic energy resources occur on NFS lands. Approximately 15 million acres of those lands are under lease for coal, oil, gas, geothermal, and other minerals. During FY 1989, coal production from NFS lands was estimated at 53 million tons; mineral activity on national forests and grasslands generated receipts of nearly $266.5 million from rents, royalties, sales, and bonus bids; and the market value of these minerals is estimated at $4.0 billion. The Forest Service encourages exploration and development of mineral resources in cooperation with the Department of the Interior agencies and with consideration for other resource values.

- Real estate management. NFS unit boundaries encompass about 39 million acres of land belonging to private individuals, corporations, or States. Exchanges of land at fair market value improve land ownership patterns and meet conservation objectives. Locating accurate land lines to determine legal boundaries between NFS and other ownerships helps avoid encroachment and identify NFS lands for public use and enjoyment. Land purchases are principally done to meet important conservation needs, including protecting critical wildlife habitat, naturally significant ecosystems, and Congressionally designated conservation areas; and providing for public outdoor recreation opportunities. Donations and the acquisition of partial interests, such as scenic easements, are growing in importance on NFS lands.

Acquisition of rights-of-way from adjoining private landowners provide necessary access to Federal lands to conduct resource management activities. About 800 acquisitions are made each year. Rights-of-way are normally acquired through negotiated purchases, exchanges, or donations. Condemnation procedures are rarely used.

Title claim cases are normally resolved through sale, interchange of title, or exchange. An estimated 50,000 title claim cases have resulted from overlapping ownerships between Federal and private lands during past years. There were 213 cases resolved using the Small Tracts Act authority (P.L. 97-465) in FY 1989. About 18,000 acres are involved in claims arising from early 1900 homesteading activities. Unresolved title claim cases increase at a rate of about 500 cases per year. Resolution of title claims protects the capital investments in both NFS and adjoining lands. Planned landownership adjustments in areas with intermingled ownership on scattered land units result in more efficient management.

Special Uses. Approximately 65,000 nonrecreation and recreation residence special uses are authorized on NFS lands. Examples of nonrecreation special uses include communications sites, private roads, power transmission lines, and various types of pipelines. In addition, over 2,000 hydroelectric development projects on or affecting NFS lands have been proposed for licensing by the Federal Energy Regulatory Commission in the past several years. These uses are administered to protect public health, safety, and environmental values; respond to public needs; and ensure fairness and equity for the user and the public. About $5 million was collected in special use rental fees in FY 1989.

- Transportation system and structures. The NFS operates and maintains approximately 360,000 miles of roads. In addition, the Agency maintains about 15,000 buildings. Both the roads and structures are essential to the management, protection, and utilization of the national forests, and to the accomplishment of the resource programs funded by the FY 1991 budget.

Minerals and Geology Management

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Leasable minerals	$	11,015	11,015	10,895	11,389	10,751	-638
	FTE	170	180	180	180	170	-10
Locatable minerals	$	11,643	11,932	11,802	12,345	11,673	-672
	FTE	219	227	227	227	220	-7
Common variety minerals	$	2,832	2,832	2,801	2,927	2,734	-193
	FTE	39	42	42	42	40	-2
Geology	$	2,949	2,949	2,916	3,052	2,857	-195
	FTE	59	59	59	59	59	0
Total	$	28,439	28,728	28,414	29,713	28,015	-1,698
	Cases	29,152	27,360	26,983	26,983	26,444	-539
	FTE	487	508	508	508	489	-19

General

Satisfying the Nation's need for raw materials to support economic growth and national security is dependent on domestic mineral and fuel production from private and Federal lands. Private industry responds to these production needs and, where National Forest System (NFS) lands are involved, the Forest Service guides and assists this activity.

Federal mineral and energy resources are categorized as leasable and locatable minerals, and as common varieties of mineral materials. The Forest Service evaluates industry applications or proposals to explore and develop energy and mineral resources on NFS lands. The Agency cooperates and coordinates with the Bureau of Land Management (BLM), Bureau of Mines, U.S. Geological Survey (USGS), Minerals Management Service, and the Office of Surface Mining, Reclamation, and Enforcement in management of the nation's mineral and energy resources.

In cooperation with the Department of the Interior (USDI), procedures and requirements for administering mineral activities are developed to ensure coordination with other resource values and uses. The two agencies share personnel to manage mineral activities, including the processing of patent applications and examination of mining claims. Service to the public and efficient use of available expertise are enhanced by these cooperative efforts.

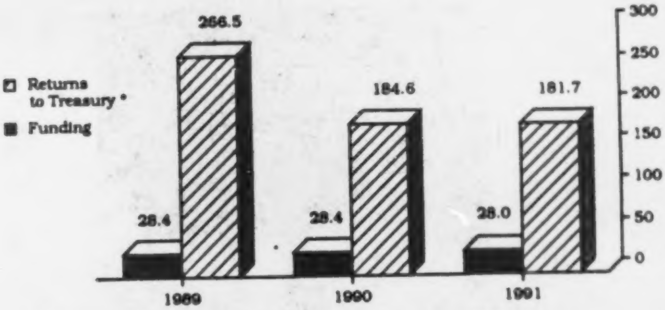
The Forest Service minerals program issues and administers special use permits for other land uses essential to the implementation of mineral development projects on NFS lands. Where privately owned minerals underlie NFS lands, the Agency manages surface activities associated with the exploration and development of the private mineral estate. These reserved and outstanding private mineral rights below NFS lands are most common in the Eastern States.

The number of mineral cases in a given year is dependent on many factors, including mineral prices, overall economic conditions, and industrial activity. The uncertainties associated with predicting these factors make it difficult to estimate future caseloads.

The Federal Onshore Oil and Gas Leasing Reform Act of 1987, PL 100-203 (30 USC 226 et. seq.), granted the Secretary of Agriculture authority to approve and issue permits to explore and develop oil and gas leases on NFS lands. Regulations governing the implementation of these new authorities are to be finalized during FY 1990. Although this authority aids in more timely processing, approval, and issuance of permits, the process is hindered by the Conner v. Burford Decision (9th Circuit Court). The Decision requires more stringent NEPA analyses prior to issuing new and reissuing expired leases. Costs for analyses of this magnitude are approximately $8 million for the 28 forests where there is ongoing energy mineral production. The more stringent analysis requirements directly contributes to the FY 1989 increase of 509 unprocessed cases over FY 1988.

Minerals receipts increased approximately 25 percent in FY 1989 over FY 1988. The following actions primarily contributed to this increase: a competitive leasing system authorized under the Federal Onshore Oil and Gas Leasing Reform Act of 1987 and implemented in FY 1989; and, in FY 1988 after 50 years of private ownership, the reversion of the Reserved and Outstanding Rights to the federal government. These two actions maintained revenue levels which would have otherwise dropped due to expired unprocessed leases affected by the Connor v. Burford Decision. Returns to the U.S. Treasury from mineral and energy rents, royalties, sales, and bonus bids on NFS lands are about seven times higher than the minerals and geology program costs.

Minerals and Geology Programs Funding and Returns to the Treasury
Million Dollars



* Includes receipts from NFS land deposited directly to USDI

The geology program supports various Forest Service programs and activities, including land and resource management planning, timber sale layout and road construction, mined land reclamation, watershed management and protection, recreation development, and other facilities construction. Geologic information is used for the assessment of mineral resources and the evaluation, management, and protection of ground water resources and underground storage spaces on NFS lands.

The mining industry assists minerals operations through cooperative deposits and agreements for funding of environmental studies and other cooperative offsite mitigation efforts. The majority of offsite mitigation projects have been directed toward fish, wildlife, and recreation enhancement projects. These contributions are estimated at $1 million in FY 1989.

Leasable Minerals

Objective

To make available leasable energy and mineral resources from NFS lands. To administer the exploration, development, production, and reclamation of leasable minerals with consideration for multiple use resource values.

Program description

Leasable minerals include energy resources (oil, gas, geothermal energy, and coal) and other minerals (phosphate, sodium, and potassium), both acquired and public domain; and acquired hardrock minerals (lead, silver, etc.). The Forest Service cooperates with BLM and the Office of Surface Mining in the management and permit administration of the nation's mineral and energy resources.

Geothermal heat gradient drilling, Newberry Volcano, Deschutes National Forest in Oregon

Leasable minerals program activities include:

- Processing lease applications and related proposals and developing stipulations in accordance with the authority granted by the Federal Onshore Oil and Gas Leasing Reform Act of December 1987 and the Connor v. Burford Decision by the 9th Circuit Court.

- Determining terms and conditions to include in plans of operation.

- Ensure coordination with surface resources.

- Issue and administer leasable minerals special use permits.

- Ensure that mineral exploration, development, production, and reclamation activities comply with applicable laws and regulations.

- Monitor activities for compliance with approved operating plan requirements.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Leasable minerals	$	11,389	10,751	-638
	FTE	180	170	-10

A decrease of $638,000 is proposed from the 1991 base.

This funding level will provide for the processing of approximately 70 fewer preleasing actions than the FY 1991 base program. Emphasis will be directed at resumption of leasing in high priority areas.

Object class information

Salaries and benefits	-406
Travel	-35
Transportation of things	-13
Rent, communications, and utilities	-56
Other services	-83
Supplies, materials, and equipment	-45
Total	-638

Locatable Minerals

Objective

To provide access to locatable minerals to enhance the industrial and economic strength of the United States. To encourage industry proposals for mineral development on public domain lands in the National Forest System. To protect surface resources and values.

Program description

Locatable minerals are hardrock minerals (gold, silver, lead, zinc, etc.) occurring in the public domain and disposed of by the Federal Government under the U.S. Mining Law of 1872. Anyone may file a claim for locatable minerals and obtain necessary operating approvals for development and mining.

Recreational mining, gold recovery with a sluice box. Klamath National Forest, California

Locatable minerals program activities include:

- Examine validity of mining claims.
- Ensure coordination with surface resources.
- Process plans of operation.
- Monitor compliance with the U.S. Mining Law of 1872 and applicable regulations.
- Monitor mining activities for compliance with requirements in approved plans of operation.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Locatable minerals..........$	12,345	11,673	-672
FTE	227	220	-7

A decrease of $672,000 is proposed from the 1991 base.

Funding at this level will provide for emphasis on areas affected by the growing locatable program associated with the Western Gold Rush. Program shifts include a reduced level of on the ground administration with more emphasis directed at processing and approving nondiscretionary proposals. Environmental concerns and mitigation will also be addressed through the additional emphasis given the planning aspects of the program.

Object class information

Salaries and benefits..................	-284
Travel..............................	- 67
Transportation of things................	-17
Rent, communications, and utilities.......	-101
Other services.........................	-135
Supplies, materials, and equipment........	- 68
Total.............................	-672

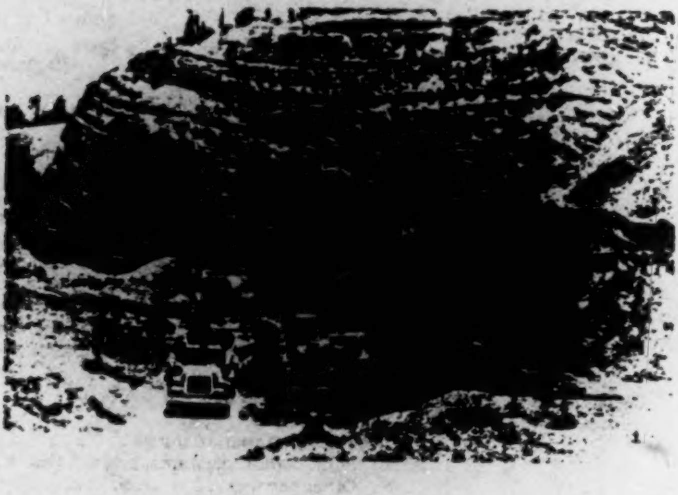
Common Variety

Objective

To determine availability of mineral materials. To provide for extraction and use consistent with sound land and resource management practices.

Program description

Mineral materials include common varieties of gravel, sand, stone, and other materials used in the construction of highways and other facilities. These minerals on NFS lands are sold outright, granted free of charge to qualified users, or used to build and maintain Forest Service road systems and other facilities.



Cinder Cone Operation, mining of landscaping materials, Coconino National Forest, Arizona

Minerals materials program activities include:

- **Inventory of mineral materials resource.**
- **Develop and process operating plans.**
- **Ensure coordination with surface resources.**
- **Conduct appraisals.**
- **Administer sales, free-use disposals, and special use permits associated with disposal of mineral materials.**
- **Monitor compliance with laws and regulations.**
- **Monitor operations, including reclamation.**

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Common variety minerals	$	2,927	2,734	-193
	FTE	42	40	-2

A decrease of $193,000 is proposed from the 1991 base.

Administration of existing material sources will be the highest program priority. The current availability of common variety mineral materials within existing developed pits will be maintained. There will be a decreased emphasis on development of new sources necessary to meet increasing demands in and around the major metropolitan areas. A decrease in revenues generated through the sale of mineral materials is likely to occur as developed resources are exhausted.

Object class information

Salaries and benefits	-81
Travel	-20
Transportation of things	-3
Rent, communications, and utilities	-20
Other services	-57
Supplies, materials, and equipment	-12
Total	-193

Geology Program

Objective

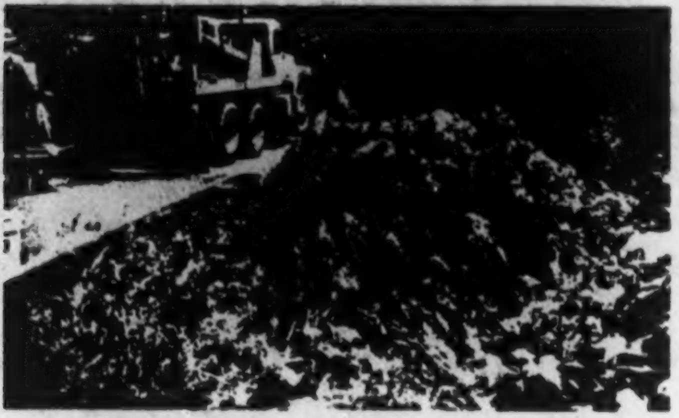
To identify and evaluate geologic conditions and hazards that affect the safety and cost effectiveness of Forest Service activities. To provide and interpret geologic and minerals resource information for land management planning, environmental protection, mined land reclamation, and other agency or State cooperative management programs.

Program description

The geology program provides information and support services for all Forest Service land and resource management activities.

Geology program activities include:

- Gather, interpret, and present information about geologic conditions and mineral resources for resource evaluation and land management planning.
- Gather, interpret, and report geologic factors that affect the design, construction, and maintenance of Forest Service facilities. This includes such work as landslide investigations, foundation studies, and investigations to locate construction materials.
- Gather and interpret geologic information needed to develop and protect such resources as ground water, underground spaces, and minerals.



Providing geotechnical slope stability on road slippage, Siuslaw National

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Geology	$	3,052	2,857	-195
	FTE	59	59	0

A decrease of $195,000 is proposed from the 1991 base.

This program level will provide the support needed for the timber sale preparation program and provide support to other resource program areas.

Object class information

Travel	-72
Rent, communications, and utilities	-30
Other services	-66
Supplies, materials, and equipment	-27
Total	-195

Real Estate Management

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
		(Dollars in thousands)					
Land exchange and adjustment	$	6,445	6,145	6,078	6,361	7,206	+845
	Acres	128,411	97,500	96,156	96,156	116,700	+20,544
	FTE	136	134	134	134	139	+5
Land classification, status, and planning	$	3,063	3,860	3,818	3,993	4,804	+811
	FTE	65	74	74	74	79	+5
Special uses	$	10,256	10,320	10,207	10,688	12,630	+1,942
	FTE	250	255	255	255	270	+15
Geometronics	$	5,739	5,935	5,870	6,137	5,397	-740
	FTE	93	96	96	96	87	-9
Total	$	25,503	26,260	25,973	27,179	30,037	+2,858
	FTE	544	559	559	559	575	+16

General

Real Estate Management involves developing and perpetuating the land base of the National Forest System estate to meet a variety of public purposes as provided by the Agency's legislative mandates.

Real Estate Management activities include:

- Land exchange and adjustment;
- Land classification, status, and planning;
- Special land uses (nonrecreational); and
- Geometronics.

Land Exchange and Adjustment

Objective

To improve National Forest System (NFS) landownership patterns. To reduce resource management costs and facilitate development of adjacent non-Federal lands.

Program description

The land exchange program improves landownership patterns with minimal impact on the Federal budget. Both Federal and non-Federal lands benefit from the improved landownership patterns. Included in these benefits are protecting important resource values, more efficient resource administration and road management, the reduced need for locating, posting, and maintaining property boundaries, and facilitation of the resolution of claims.

Land exchanges benefit the private sector and local governments by facilitating the development and expansion of communities and businesses on lands that are better suited for non-Federal uses. All exchanges are made with willing owners on an equal fair market value basis.

In the western States, many land exchanges involving large acreages have taken place with State and local governments, railroad, timber, and mining companies, and ranchers. The exchanges often involve "checkerboard" landownership patterns resulting from 100-year-old land grants. Exchanges solve problems caused by fragmented ownership and assist local communities by exchanging isolated tracts of non-Federal land for Federal land adjacent to expanding communities. Recent wilderness acts include provisions which direct the acquisition of non-Federal land by exchange to preserve the wilderness character.

A reduction in the miles of Federal property lines lessens the costs of property line location and maintenance and the risk of trespass for both the Federal Government and neighboring landowners.

In the past three years, 473 exchanges were approved. As a result, 389,022 non-Federal acres have been acquired in exchange for 268,816 acres of Federal land, with a value of over $303.0 million.

In FY 1989, 183 exchanges (128,411 non-Federal acres) reduced NFS boundaries by 1,414 miles, representing a savings of $7.8 million in land line location costs. Such savings have amounted to $23.4 million over the past three years. Additional savings result from the reduced need for rights-of-way, reduced special use administration, resolution of trespasses, and other factors related to a more efficient landownership pattern.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Land exchange and adjustment	$	6,361	7,206	+845
	FTE	134	139	+5

An increase of $845,000 is proposed from the 1991 base.

The increase in land exchange funds will permit a total of 116,700 acres to be exchanged and/or adjusted in FY 1991, 20,544 more acres than the 96,156 acres in the 1991 base. This represents about six percent of the approximately two million acres currently involved in active exchanges or identified as suitable and available for exchange. Emphasis will continue on large acreage exchanges that will significantly reduce administrative costs in future years.

One of the most significant savings resulting from exchanges is in reduction of miles of Federal property line, thereby lessening the cost of property line location and maintenance, and the risk of trespass. Completion of this recommended program for FY 1991 could result in land line survey cost savings of about $6.5 million.

Object class information

Salaries and benefits	+203
Travel	+114
Rent, communications, and utilities	+207
Other services	+207
Supplies, materials, and equipment	+114
Total	+845

Land Classification, Status, and Planning

Objective

To plan long term landownership adjustments for efficient resource management. To maintain landownership title records to ensure proper administration of lands subject to reservations, outstanding rights, mineral withdrawals, other conditions of title, and laws that direct or affect land management. To provide an automated retrieval system of land title information. To resolve title disputes.

Program description

Of the 191 million acres of NFS land, 28 million acres were acquired and 163 million acres were reserved from the public domain. These lands consist of thousands of individual tracts, each having an individual ownership title file. This record of ownership information must be actively maintained in order to guide resource management as to title restrictions, reservations, other conditions of title, and legislative direction in over 500 laws that affect management of NFS land.

Accurate, current ownership records must be readily available for resource management. Precise records are essential for such situations as the conveyance of approximately two million acres of NFS lands in Alaska to other public and private ownerships and proper allocation of the 25 percent fund and PILT (Payment in Lieu of Taxes) payments. Currently private ownership of millions of acres of reserved mineral rights is expiring with ownership passing to the United States.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Land classification, status, and planning	$	3,993	4,804	+811
	FTE	74	79	+5

An increase of $811,000 is proposed from the 1991 base.

The proposed program will provide increased resolution of title claim cases short of litigation. The number of cases resolved through litigation will remain the same. It will provide for maintenance of the basic land status records with increased progress on conversion to the automated record keeping system. It will allow for some advance work to be done for later inclusion of these records in a Geographic Information System.

Object class information

Salaries and benefits	+189
Travel	+115
Transportation of things	+23
Rent, communications, and utilities	+108
Printing and reproduction	+38
Other services	+184
Supplies, materials, and equipment	+154
Total	+811

Special Uses (Nonrecreation)

Objective To authorize and administer special uses on National Forest System (NFS) lands in accordance with laws, regulations, and national forest plan guidelines.

Program description Special use authorizations are required for a variety of uses on NFS lands. Terms and conditions are established to assure proper use of the land. Authorized uses are periodically monitored to ensure compliance with these requirements. Most special uses are charged a fee based on the fair market value of the use.

The workload associated with use applications is subject to the number of applications received. Processing involves review of the proposal in relation to forest management guidelines, field review, environmental analysis, preparation of the authorization, and determination of fees to be charged. In FY 1991, 6,000 applications are anticipated. Many of these applications will be related to energy development and will be funded through the minerals program.

Administration of authorizations includes: inspection and monitoring to ensure the terms are met and forest resources are protected; evaluation of fees; and revision of the operating plan and authorization. In FY 1989, there were 65,000 uses authorized on NFS lands. Rental fees for these uses exceeded $5 million in FY 1989.

Hydroelectric power generation is a specialized area of the special use program. This involves cooperating with the Federal Energy Regulatory Commission (FERC) in the review of proposals for hydroelectric development and the relicensing of existing projects on NFS lands. Environmental analysis of the projects can be very complex and often requires an environmental impact statement. The Forest Service is required by law to develop terms and conditions to protect NFS lands. These terms and conditions must be included in the licenses granted by the FERC.

In some cases, cost collection agreements are used to recover Forest Service costs of processing applications and administering the special use authorization.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Special Uses	$	10,688	12,630	+1,942
	FTE	255	270	+15

An increase of $1,942,000 is proposed from the 1991 base.

Of the 50,000 nonrecreational use permits in force, the FY 1991 program will allow for the administration of 27,470 permits. The remaining 22,530 permits are those that require a minimum degree of administration, including cases having little or no environmental or public health and safety impacts.

About 3,150 of the expected 6,000 special use applications will be processed, augmented by cost collection agreements with applicants and permit holders to provide support for processing applications and monitoring of construction.

The fee schedule for linear rights-of-way published in the Federal Register on December 5, 1986, will be implemented for those permits that provide for a fee adjustment in FY 1991. Work will continue on determining and implementing fair market value rental fees for communication sites and other uses.

Fees will be reviewed and adjusted to market value on approximately 3,000 permits. Emphasis will continue on establishing and implementing fee schedules for broader geographic areas in order to streamline the process for fee reviews. This will result in increased efficiency and more uniformity in fees charged for similar uses. Minimum fees will be reviewed and adjusted in four regions.

Object class information

Salaries and benefits	+582
Travel	+221
Transportation of things	+50
Rent, communications, and utilities	+442
Other services	+408
Supplies, materials, and equipment	+239
Total	+1,942

Geometronics

Objective

To provide essential maps and related products.

Program description

The geometronics program produces base series maps to support resource management needs. There are two standard base series map products: primary and secondary. Revision schedules for both series vary from 7 to 10 years.

Primary base series maps are 7 1/2-minute quadrangle maps at 1:24,000 scale (2.64" = 1 mile). These are the principal work maps for field personnel. They serve as the base for inventory and display of resource and other thematic information.

Secondary base series maps are 1:126,720 scale (1/2" = 1 mile), constructed to cover entire forests or major divisions of a forest. The main use of this series is for maps sold to forest visitors under a national map sales program.

The Forest Service mapping program supports National Forest System (NFS) management. The program displays resource, facility, and management data on existing standard cartographic bases.

Map production is centralized at the Geometronics Service Center (GSC) in Salt Lake City, Utah. GSC produces the thematic layers, such as transportation systems, land status, and administrative sites, required by all units.

Regional field units provide support in aerial photography, field editing, and publication. They produce special resource thematic maps for local staff needs.

The program also includes modernization of the mapping program. Examples include:

- Computer software development to incorporate automated mapping procedures into the base series program, to provide data for Geographic Information System (GIS) use, and to generate special purpose maps from standard data sets.
- Development of a data base to catalog GSC-generated data for Agency use.
- Computer software development to exchange interagency data.
- Development of an automated digitizing system to collect digital terrain data to support the orthophoto program. Orthophotos are rectified aerial photos to remove scale, topographic relief and distortions, and to show correct distances.

The Forest Service cooperates with other Federal agencies in various mapping and charting activities. The Federal Interagency Coordinating Committee on Digital Cartography coordinates digital cartographic activities within Federal agencies to avoid duplication and waste. The objective is to develop and adopt common standards of content, format, and accuracy for digital cartographic base data to increase their interchangeability and potential for future use.

Current cooperative efforts include:

- Base series mapping program. The Forest Service uses U.S. Geological Survey (USGS) 7 1/2-minute quadrangles for a more current map base to display thematic information. FY 1990 cost share is approximately $40,000 for the USGS to revise 80 quadrangles.

- National aerial photography program. The Forest Service has been active in this program since 1986, and, prior to that time, in its predecessor, the national high altitude photography program. The program provides photographic coverage of NFS lands on a six-year cycle. This photography is a valuable tool for photo interpretation of resource information, revision of base series maps, and generation of orthophotos for displaying thematic information. The FY 1990 contribution to this program is $250,000.

- Digital elevation model (DEM) program. The Forest Service has adopted the DEM as its standard digital terrain file. Since DEM is also a USGS standard file, it allows for the exchange of DEM data through an interagency agreement. The agreement will reduce the cost of completing DEM coverage over NFS lands by 35 percent. An annual exchange of 700 quadrangles of DEM data is scheduled through 1994.

- Digital planimetric data program. The Forest Service has established two cooperative programs with the USGS to provide copies of all digital data collected from the primary base series mapping. The USGS will add this data to their National data base and distribute it to the public and other government agencies upon request.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Geometronics	$	6,137	5,397	-740
	FTE	96	87	-9

A decrease of $740,000 is proposed from the 1991 base.

Both primary and secondary map production will decline by approximately nine percent from FY 1991 Base. Annual primary map production will be 1,150 compared to 1,300. Annual secondary map production will drop from 33 map sheets to 29.

Resource managers have identified a 7-year revision schedule as the optimum for meeting resource program needs. Geometronics funds will provide 85 percent of the primary base series, or an 8.2 year revision schedule. Funds will provide 60 percent of the secondary base series, or an 11 1/2-year revision schedule.

Object class information

Salaries and benefits	-383
Travel	-23
Rent, communications, and utilities	-37
Printing	-19
Other services	-182
Supplies, materials, and equipment	- 96
Total	-740

Land Line Location

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Land line location....................	$	28,678	29,204	28,885	30,195	28,394	-1,801
	Miles	4,775	4,378	4,318	4,318	3,980	-338
	FTE	440	468	468	468	450	-18

Objective

To locate, mark, post, and maintain property lines between National Forest System (NFS) land and other property before resource management activities begin.

Program description

Proper location of Forest Service property lines is a fundamental responsibility of land ownership and is a prerequisite to construction and resource management activities adjacent to property owned by others. This program identifies these legal property boundaries. The program has three primary activities: initial location, marking, and posting of boundary lines; reestablishment of boundaries lost in the absence of land line maintenance; and land line maintenance.

Where property boundaries are not identified, resource management activities cannot proceed. For example, a timber sale cannot proceed because of the risk of cutting non-Federal timber. Encroachment by private landowners adjacent to NFS lands occurs at a rate in excess of two cases per mile where property lines have not been marked.

In a limited number of cases, where costs of needed land line location surveys would exceed the purchase costs of specified inholding tracts, the Chief of the Forest Service or a delegated representative may approve the purchase, from willing sellers, of such inholdings with funds from the land line program. Boundaries reduced through such acquisitions are counted as though surveyed.

Some surveys of NFS lands are accomplished by the Bureau of Land Management (BLM) and reimbursed to BLM under an interagency agreement. In recent years, such reimbursements have averaged almost $2 million annually.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Land line location..........$	30,195	28,394	-1,801
FTE	468	450	-18

A decrease of $1,801,000 is proposed from the 1991 base.

This funding level will provide for accomplishment of 3,980 miles of land line location. The estimated funding is necessary to provide support for the timber sale preparation program, to maintain mineral outputs consistent with the past several years, and to resolve a limited number of title claims. Many of the lines involve more difficult terrain, erroneous surveys, or deteriorated corner evidence, which contribute to increased unit costs. Recent legislation affecting contracting procedure has also increased unit costs.

Object class information

Salaries and benefits..................	-766
Travel..............................	-23
Transportation of things................	-18
Rent, communications, and utilities	-60
Other services........................	-756
Supplies, materials, and equipment........	-141
Lands and structures..................	-37
Total............................	-1,801

Maintenance of Facilities

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)			
Maintenance of facilities \$	17,888	19,102	18,883	20,007	22,355	+2,348
FTE	282	296	296	296	314	+18

Objective

To maintain and make minor improvements in facilities used for fire and general administrative purposes.

Program description

Fire and general administrative facilities support National Forest System (NFS) activities. Facility types include administrative sites, offices, service and general purpose storage buildings, and associated water, waste water, and electrical systems. This program also maintains airports, heliports, fire lookouts, and fire management facilities. Operation and Maintenance of Quarters, a permanent appropriation, provides for maintenance of employee quarters.

The Forest Service has about 15,000 permanent buildings which encompass 12.8 million square feet. These buildings are primarily at ranger district and work center locations. About 46 percent of these buildings were constructed before 1940, 37 percent between 1945 and 1965, and the remaining 17 percent since 1965. Most of these facilities were designed and constructed with a structural and functional life expectancy of 30 to 35 years. Maintenance, minor renovation, and repair costs have increased with the age and increased service demanded of these facilities. There is a maintenance backlog on approximately 60 percent of the facilities, with an estimated cost of \$89 million to correct the facilities. This includes deferred work items such as roof replacements, siding, painting, and floor coverings.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Maintenance of facilities.	$	20,007	23,352	+3,345
	FTE	296	314	+18

An increase of $3,345,000 is proposed from the 1991 base.

This program will provide for high priority maintenance and minor improvements for buildings used for fire management and general administrative purposes and their associated utility systems.

Emphasis will continue to identify and abate the health hazards to facility occupants from asbestos-containing materials and radon gas.

At this funding level the backlog of deferred facility maintenance will decrease by two percent.

Object class information

Salaries and benefits.	+679
Travel	+135
Rent, communications, and utilities.	+239
Other services	+1,266
Supplies, materials, and equipment.	+880
Lands and structures.	+146
Total.	+3,345

Forest Fire Protection

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)			
Fire presuppression................ $	158,707	0	0	0	0	0
FTE	3,327	0	0	0	0	0
Fuel management.................... $	7,909	0	0	0	0	0
Acres treated	292,940	0	0	0	0	0
	273	0	0	0	0	0
Total.. $	166,616	0	0	0	0	0
FTE	3,600	0	0	0	0	0

General

The forest fire protection (FFP) program is made up of two activities, fire presuppression and fuels management. These activities will be funded by the new appropriation, Firefighting, in FY 1991. See Firefighting appropriation section for a discussion of the program.

Fighting Forest Fires

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
Fighting forest fires....................	$ 375,000	0	0	0	0	0

General

This program funds the costs of fighting forest fires and partially funds the emergency rehabilitation of burned over National Forest System lands. The FY 1991 program is discussed under the new appropriation Firefighting. We propose $118,660 for fighting forest fires under Firefighting.

Cooperative Law Enforcement

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc.(+) or Dec. (-) from Base
Cooperative law enforcement	$	10,615	11,205	11,082	11,563	17,085	+5,522
	FTE	75	75	75	75	75	0

(Dollars in thousands)

Objective

To protect National Forest System (NFS) resources, operations, employees, and forest visitors from dangers associated with vandalism or theft of personal property, cannabis cultivation, and assaults. To eliminate the illicit cultivation, manufacture, or distribution of cannabis or other controlled substances on NFS lands. To cooperate with law enforcement agencies of the States and their subdivisions.

Program description

The number of visitors to the national forests equals or greatly exceeds the resident population of the counties in many cases. Since this visitor use is seasonal and often occurs in geographically remote areas, additional costs are associated with protecting the visiting public.

The cooperative program reimburses State and local law enforcement agencies for extraordinary expenses associated with protecting the public and their property on the national forests.

The NFS drug control initiative as authorized by P.L. 99-570, Anti-Drug Abuse Act of 1986, Title XV, October 27, 1986, as amended, provides for the detection of cannabis being cultivated within the boundaries of the NFS and apprehension and prosecution of persons involved in cultivation operations. Funding for this initiative is expended internally within the Forest Service and is not for reimbursement to State and local law enforcement agencies.

Public Law 100-690 amended the Anti-Drug Abuse Act of 1986 to remove the "within the boundary" restriction. This allows for investigations and law enforcement actions outside the exterior boundaries for drug related offenses committed within the national forest lands and those which affect the administration of the national forests.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Cooperative program	$	7,902	10,052	+2,150
NFS Drug Control	$	3,661	7,033	+3,372
	FTE	75	75	0

An increase of $5,522,000 is proposed from the 1991 base.

The cooperative program increase will provide additional support by state and local law enforcement agency task forces under reimbursable cooperative agreements.

The increase in the drug control program allows for special drug control operations that would concentrate on major problem areas (cannabis cultivation, etc.) in the national forests. These anti-drug activities enhance the protection of resources, employees, and visitors on the National Forest System.

Funding will allow for task force operations with Federal land management and drug enforcement agencies. There would also be the creation of special task force groups to work in areas along the Southwest border, Kentucky, and other southern states where a dramatic increase in drug production and trafficking activities are occurring.

Additional funding will also be used for purchase and modification of specialized equipment used in drug control operations.

These increases would also be used for development and use of a system for intelligence collection and analysis in drug activities occurring on all National Forest System lands.

Object class information

Travel	+509
Other services	+2,977
Supplies, materials, and equipment	+2,036
Total	+5,522

Forest Road Maintenance

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Forest road maintenance..................	$	80,729	96,886	95,827	100,117	91,230	-8,887
	Miles	355,700	360,000	360,000	360,000	362,000	+2,000
	FTE	1,122	1,284	1,284	1,284	1,200	-84

Objective

To operate and maintain a cost effective transportation system to support all National Forest System (NFS) resource programs. To provide for user safety, convenience, and economy. To provide essential access for programs funded in the budget.

Program description

The Forest Service transportation network is maintained to efficiently achieve NFS resource management objectives of protecting the environment, investments, adjacent resources, and all users; maintaining applicable air and water quality standards; and keeping the system in a condition suitable for intended purposes.

Resource programs depend on the forest development road system to provide essential access for management and use of NFS lands in the following activities:

- forest fire protection and suppression;
- removal of energy producing resources such as oil, natural gas, and coal;
- control of forest insects and disease;
- timber sale planning and harvesting;
- reforestation and timber stand improvement;
- forest recreation activities such as camping, hunting, fishing, hiking, skiing, snowmobiling, and driving for pleasure; and
- grazing.

The forest development road system contained about 360,000 miles (including the Tongass National Forest) of various standards and types of roads at the beginning of FY 1990. About 85 percent of this mileage is single lane, and 65 percent is unsurfaced (no gravel or pavement). The increase in road mileage above the base shown in the summary table results from adding approximately 2,000 miles of new construction planned for FY 1990.

Specific road maintenance program funded activities include:

Transportation system management

- Traffic studies. Collect and analyze data on the use and physical condition of the road system.

- Jurisdiction. Determine road jurisdictions and resolve jurisdictional problems. Establish road management responsibilities with States, counties, other Federal agencies, and private landowners.

- Cost-share program. Manage rights-of-way and administer all construction and use agreements. When mutually beneficial and cost effective, use cost-share agreements to jointly develop and maintain a common road system between private landowners and the Forest Service.

- Regulations and controls. Where needed, develop and implement traffic controls related to vehicle size, type of use, road closures, and use permits in order to prevent damage to the road or resources. Maintain use within capacity limits. Ensure that commercial users maintain roads commensurate with their use. Close roads to traffic to achieve specific management objectives. Broaden opportunities for off-road and nonmotorized recreation. Continue to protect wildlife, prevent damage to resources, reduce construction and maintenance expenditures, and control use to prevent road damage.

- Enforcement. Cooperate with local authorities to enforce Federal laws, rules, and regulations on the forest road system. This includes road closures, load limits, etc.

Transportation system maintenance

- Maintenance planning. Inspect roads and bridges to determine maintenance needs. Develop a plan to finance and accomplish work. Coordinate maintenance activities of timber purchasers, cooperators, and other commercial users.

- Maintenance work. Perform work such as roadside brushing, surface grading, culvert cleaning, replacing damaged or depleted surfacing materials, and repairing and replacing bridges and other structures. Provide traffic control devices such as signs, barricades, and markings needed to maintain safe traffic flow.

Responsibility for road maintenance

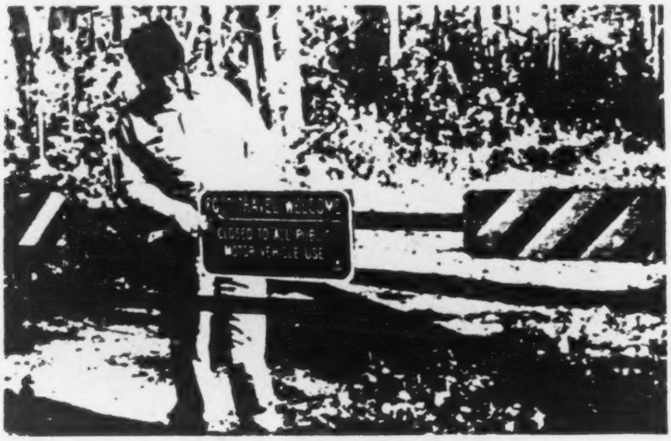
Federal appropriations provide approximately 48 percent of the funds for this program. Timber purchasers and commercial users are required to maintain roads in a satisfactory condition commensurate with their use. Purchasers of government timber are responsible for approximately 48 percent; and commercial users, such as those in mining or hauling private timber, account for the remaining 4 percent.

The Forest Service is responsible for all maintenance attributed to administrative and noncommercial use. The recreating public is the primary user of the forest development road system. About 252 million visitor-days of recreation use on the national forests each year result from access provided by the forest development road system.

Required road maintenance work does not always result directly from road use. This work includes cleaning culverts, clearing roadside brush, removing slides, maintaining traffic control devices, and painting bridges. These maintenance costs are shared by the Forest Service and commercial users when the roads are used for commercial hauling. The Forest Service is responsible for all these costs when the roads are not in commercial use.

The most efficient road maintenance strategy is to provide sufficient maintenance funds so that restoration and reconstruction costs do not increase in future years. Some needed road maintenance work has been deferred. This deferral may not result in unacceptable resource damage or unsafe road conditions in the short term, but will likely increase road reconstruction costs and environmental risk if continued for the long term.

Land management objectives do not require all roads to be open to all vehicles at all times. Forest plans guide when and where roads should be closed to protect resource values or achieve other objectives. Once a given resource activity is completed, local land managers may close roads to protect other resources such as soil, water, or wildlife; or to enhance other public recreational opportunities such as hiking, horseback riding, snowmobiling, and off road vehicle use. To reduce maintenance costs, the use of some roads is restricted and some are permitted to deteriorate. Road closures do not always mean significantly lower maintenance costs, since installing gates or barriers and enforcing closures can be costly activities.


FOOT TRAVEL WELCOME
CLOSED TO ALL PUBLIC MOTOR VEHICLE USE

Roads are often closed to vehicular use to protect resources such as wildlife, soil, and water. Nonmotorized public use is welcomed and encouraged.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Forest road maintenance	$	100,117	91,230	-8,887
	FTE	1,284	1,200	-84

A decrease of $8,887,000 is proposed from the 1991 base.

The forest road system is estimated to be 362,000 miles beginning FY 1991. This represents a net increase of 2,000 miles (0.5 percent) from the FY 1991 base. This funding level provides funds for restoration of existing roads and related engineering support. A small reduction in the backlog of road maintenance needs will occur and the outyear restoration and reconstruction costs will decrease.

Road System - Maintenance Levels

	1/ 1989 Actual Miles	2/ 1991 Base Miles	3/ 1991 Estimated Miles
Closed	66,000	66,000	67,500
Tongass National Forest	(820)	(820)	(830)
Maintained only for high-clearance vehicles	201,800	201,800	202,000
Tongass National Forest	(1,100)	(1,100)	(1,100)
Maintained for passenger cars	91,600	91,600	92,500
Tongass National Forest	(705)	(705)	(715)
Total	360,000	360,000	362,000
Total, Tongass National Forest	(2,625)	(2,625)	(2,655)

1/ Represents actual mileage at end of FY 1989.
2/ Represents mileage at the beginning of FY 1990 used for 1991 base. Represents estimated mileage at the end of FY 1990 and beginning of 1991.

Object class information

Salaries and benefits	-3,438
Travel	-138
Transportation of things	-106
Rent, communications, and utilities	-507
Other services	-3,258
Supplies, materials, and equipment	-1,087
Lands and structures	-353
Total	-8,887

Forest Trail Maintenance

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Forest trail maintenance............	$	20,797	24,044	23,781	24,907	23,854	-1,053
Resource management timber receipts..........	$	5,850	0	0	0	0	0
Total, All funds.......	$	26,647	24,044	23,781	24,907	23,854	-1,053
Miles 1/		82,690	82,960	81,817	81,817	77,577	-4,240
FTE 1/		587	612	612	612	590	-22

1/ Miles and FTEs for Resource Management, Timber Receipts, are not included in these amounts

Objective

To manage, operate, and maintain a trail system to provide opportunities for recreation and administrative travel.

Program description

The National Forest System (NFS) contains about 108,400 miles of trails including over 5,445 miles of National Scenic Trails and 4,399 miles of National Recreation Trails. Trails serve a wide constituency at a relatively small cost. Since 1970, trail use has more than doubled. Twelve percent of the total recreation use (30.3 million RVDs) on national forests occurred on trails. Eight percent (20.2 million) was non-motorized such as hiking, horseback riding, biking, four percent (10.1 million RVDs) was motorized uses including snowmobiles, motorbikes, and all terrain vehicles (ATVs). One RVD is 12 hours of use.

Forest trails provide a variety of transportation links, ranging from primitive pathways through wilderness areas to paved walkways at interpretive centers. Trails are used for diverse activities including hiking, riding and packing stock, viewing or hunting wildlife, water travel, and nordic skiing. Many trails outside of wilderness areas are used for bicycling, motorcycling, snowmobiling, and riding all terrain vehicles.

The Forest Service emphasizes the redevelopment of the trail system to meet the needs of contemporary users. To better serve users with a comprehensive system, trails within the NFS are being connected to trails on non-NFS lands, particularly those in urban areas.

If it is not maintained, a trail can deteriorate to the point that it must be abandoned or reconstructed. Trail maintenance protects the capital investment by keeping trails open for recreation and administrative access, and protects vegetation, soil, and water quality. This work includes clearing the pathway of encroaching vegetation and fallen trees, and repairing or improving trail signs, treadways, drainage facilities, and bridges.

In non-wilderness areas, modern equipment and transportation are used to clear and maintain trails. In contrast, primitive tools and techniques are used in wilderness areas to minimize the impact of human influence on these wildlands. In these areas, trail workers use hand saws or crosscut saws to clear fallen trees from the path and pack animals to carry equipment and food.

Trail maintenance is a popular volunteer activity and a popular challenge cost-share activity. The Forest Service and partners cooperate to jointly provide cash, supplies, equipment, and/or labor to accomplish trail maintenance work. A portion of this volunteer effort comes from the "adopt-a-trail" program. This long term commitment to trail care, by groups or individuals, reduces Forest Service costs. Volunteer trail maintenance has increased from around 3,500 miles in FY 1981 to 17,600 miles in FY 1989.

See "Trail Construction" for additional discussion of the trails program.

The Forest Service maintains trails for a variety of recreational and administrative users.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Forest trail maintenance	$	24,907	23,854	-1,053
	FTE	612	590	-22

A decrease of $1,053,000 is proposed from the 1991 base.

Funding at the proposed level will maintain 77,577 of the highest priority trail miles at a standard level which includes clearing the pathway of encroaching vegetation, hazard tree removal along water travelways, and maintenance of trail tread, drainage structures, bridges, and signs. Volunteers are expected to complete an additional 17,600 miles of trail maintenance. In addition, $1.4 million of the challenge cost-share program will be utilized to further extend trail maintenance accomplishments. This is in comparison to 81,817 maintained miles in the FY 1991 base.

The remaining 30,823 miles of the 108,400 mile system will receive custodial maintenance only where necessary to meet health and safety standards.

Object class information

Salaries and benefits	-727
Travel	-25
Transportation of things	-11
Rent, communications, and utilities	-32
Other services	-149
Supplies, materials, and equipment	-103
Lands and structures	-6
Total	-1,053

Timber Sales Administration and Management

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars	in thousands)		
Timber resource inventory planning .... $	17,278	21,650	21,413	22,395	23,021	+626
Thousand acres	16,500	16,500	16,500	16,500	16,500	0
FTE	352	398	398	398	429	+31
Silvicultural examination .... $	27,608	31,106	30,766	32,198	33,119	+921
Thousand acres	5,373	6,150	6,065	6,065	5,571	-494
FTE	630	675	675	675	685	+10
Sales preparation .... $	104,896	119,000	117,699	123,133	115,121	-8,012
Billion board feed offered 1/	10.52	10.36 2/	10.36	10.36	10.56	+0.2
FTE	2,225	2,379	2,379	2,379	2,300	-79
Harvest administration ....$	57,556	66,967	66,235	69,304	77,575	+8,271
Billion board feet harvested	11.95	11.50	11.50	11.50	11.00	-0.5
FTE	1,285	1,391	1,391	1,391	1,591	+200
Timber pipeline initiative ....$	0	15,000	14,836	15,547	0	-15,547
FTE	0	423	423	423	0	-423
Subtotal, NFS .... $	207,338	253,723	250,949	262,577	248,836	-13,741
Resource management, timber receipts .... $	29,252	0	0	0	0	0
Total, All Funds .... $	236,590	253,723	250,949	262,577	248,836	-13,741
FTE 3/	4,492	5,266	5,266	5,266	5,005	-261

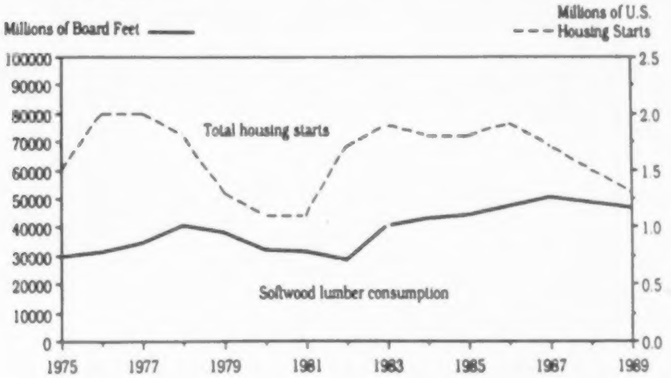
1/ Includes Salvage and Tongass volume.
2/ Appropriation action specified 11.129 BBF (after sequestration) but funds for roads will support 10.36 BBF.
3/ Does not include FTEs for Resource Management, Timber Receipts.

General

The National Forest System (NFS) contains the largest supply of standing softwood sawtimber in the United States, estimated at nearly one trillion board feet. This is approximately 47 percent of the national total.

The NFS produces approximately 28 percent of the total sawtimber harvested in the United States each year. With the continued trend of growing demand for lumber, plywood, and other timber products, forest plans and related resource management programs must anticipate and provide for higher productivity on NFS lands, when it is economically and environmentally sound.

U.S. Housing Starts Compared with Softwood Lumber Consumption 1975-1989

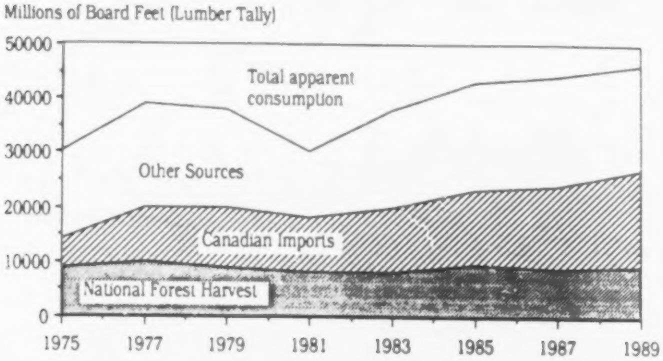


* Data projected last 3 months of Calendar Year

The amount of national forest timber harvested each year depends upon many factors. The most important is new housing starts (single family and multifamily units), a major market for softwood timber.

The share of U.S. softwood timber demand that was met through imports, largely from Canada, remained about the same as last year. The softwood lumber market share filled by imports from Canada has increased from 19.0 percent of market in 1982 to 28.4 percent of market in 1989. The U.S. and Canadian agreement on implementation of an export tax by the Canadian government should reduce imports of Canadian timber and increase demand for U.S. domestic supplies.

U.S. Softwood Lumber Consumption and Sources 1975-1989



Timber Sales Planning, Preparation, and Completion Process
Increased future timber production from NFS lands cannot occur on short notice. An orderly process must be followed to complete required planning, ensure compliance with the National Environmental Policy Act (NEPA) and other laws, build roads, and properly coordinate with management of other resources.

Timber sales planning and preparation follows the standards and guidelines in forest plans. The process begins with identification of a project area and ends with the award of a timber sale contract. A 5-year action plan is maintained for scheduling timber sale preparation. The stages of the process are:

- Position statement development. Position statement preparation includes extensive on the ground reconnaissance and data gathering to assess the technical and economic feasibility of preparing a timber sale proposal. This statement is a prerequisite to entering the proposed timber sale project in the 5-year action plan, and to making further project investments. This stage also begins the NEPA process.

- Sale area design. The sale area design is completed one to three years before sale offering. The intensive field investigation within and adjacent to the proposed project area provides information used to prepare, analyze, and evaluate alternatives under the NEPA process. The purpose of both the intensive field examination and subsequent NEPA analysis is to develop an environmentally sound and economically efficient project. As part of this process, the responsible official determines the type of environmental analysis and documentation required by the proposed project (categorical exclusion, environmental assessment, or environmental impact statement).

  During the planning and design stages of the sale, an evaluation is made of the surrounding area (a drainage, transportation analysis area, or other logical planning unit), even though a proposed timber sale may affect only a portion of the area. The pattern, methods, and timing of treatments for the entire area are considered to ensure that developments will meet management objectives. Detailed information is developed on stand conditions, silvicultural prescriptions, logging systems applications, roads, planned fuel treatments, and other resources. Sale planners complete economic analyses to show the economic results and tradeoffs involved in the sale.

- Sale plan implementation. Sale plan implementation is completed three months to three years before sale offering. This includes on the ground location of harvest units, tree marking, determination of timber volume and quality, logging system design, and road survey and design. Right-of-way easements are obtained. A further review of economic assumptions from the sale area design stage is made to ensure that all the sale related activities do not impact the sale with unnecessary costs.

- Final sale package preparation. The final sale package is prepared two to three months before sale offering. The contract, timber appraisal, advertisement, bid form, prospectus, and sale area map are assembled; and the sale is advertised.

- Bid opening. This step includes accepting the bids, conducting an auction when appropriate, and determining the apparent successful bidder. To complete the offer process, timber sales with no bids are not credited as sold.

- Sale award. The sale award process includes reviewing bidder qualifications, obtaining equal employment opportunity clearance, completing a road option investigation and feasibility review, if applicable, and identifying the qualified sale purchaser prior to award, signing the contract, and posting the sale information to the timber sale accounting system.

- Sale administration. Sale administration includes the period of time from sale award to completion of sale contract provisions. This generally takes from one to five years, without contract extension. Timber sales are administered within the terms of the approved timber sale contract to ensure compliance with the terms of the contract and to avoid waste, abuse, and fraud. Contract modification to extend time to harvest and rate redeterminations are dealt with on a case-by-case basis. Law enforcement for timber theft is partially included within sale administration.

- Post sale treatment. Post sale treatment includes brush disposal, reforestation (one to two years), stand improvement (one to five years), and other resource coordination activities that are carried out according to specific measures identified in the sale area design and updated in periodic reviews of these prescriptions.

Timber Resource Inventory Planning

Objective

To gather and provide timely information on the extent and condition of the timber resource on NFS lands.

Program description

This program and the silvicultural examination program develop information necessary for planning the orderly management of national forest timber resources. This information is used primarily to determine lands suitable for timber production, determine allowable sale quantities, establish timber sales schedules, and identify opportunities for intensive forest management.

Timber resource inventories provide the information needed to compile land classification, determine timber volume, and monitor growth rates. These inventories describe the condition and extent of the timber resource on each national forest which provides a measure to evaluate changes during the planning period.

The forest inventory process takes two to three years to complete. The first year is devoted to obtaining new aerial photographs and developing the inventory plan. The next year is primarily concerned with the collection of field plot data, type mapping, and verification of the mapping. The amount of time to do this work could be longer than one field season and depends upon the size of the forest, the number of field plots to be taken, and the amount of data collected. The last year involves the compilation of field data, analysis and updating of inventory maps, and the written evaluation of the timber resources for the forest.

Inventories also provide resource information for the national assessment program required by the Forest and Rangeland Renewable Resources Planning Act (RPA) as well as for research publications.

With a major part of the land management planning effort completed, about 16 million acres of NFS lands will be inventoried annually under this program. Maintaining this schedule will accomplish the required 10-year review cycle of NFS forest plans. The cycle for timber resource inventories is also coordinated with the schedule for State forest inventories administered under the Forest Research appropriation for forest inventory and analysis.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Timber resource inventory planning	$	22,395	23,021	+626
	FTE	398	429	+31

An increase of $626,000 is proposed from the 1991 base.

Timber resource inventory data will be collected on the full 16,500,000 acres of NFS lands as required to prepare and update Forest Plans. This program will provide for responding to appeals of Forest Plans. The increase will also compensate for increased unit costs resulting from the need for a more sophisticated data base to respond to resource issues raised in appeals and litigations.

As more Forest Plans are completed, emphasis will shift from preparing the Plans to implementation and needed revisions. The timber management portion of the land management planning process is funded in this program.

Object class information

Salaries and benefits	+601
Travel	+3
Other services	+15
Supplies, materials, and equipment	+7
Total	+626

Silvicultural Examination

Objective

To periodically review, analyze, and treat timber stand conditions to accomplish forest plan objectives. To monitor and certify silvicultural treatments and provide information to ensure the proper management of timber resources.

Program description

Both the silvicultural examination and the timber inventory planning programs provide information needed to plan the orderly management of national forests timber resources. This program gathers timber stand data, compiles and stores these data in stand files, and annually prepares an analysis and written prescription for about five million acres of forest land to ensure proper treatment. A stand prescription, based on data from the silvicultural examination, describes current stand conditions and proposed silvicultural treatment.

Timber stands are normally examined at ten-year intervals in order for land managers to monitor changing stand conditions and treatment needs. Examinations should be accomplished three to five years before the proposed treatment to allow for the orderly development of prescriptions as well as use of the information in the NEPA process.

Although Forest Service employees conduct most stand examinations, use of contractors is increasing.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Silvicultural examination.	$	32,198	33,119	+921
	FTE	675	685	+ 10

An increase of $921,000 is proposed from the 1991 base.

This program level will provide for silvicultural examination activities on 5,571,000 acres, 494,000 acres less than the 6,065,000 acres to be examined in the 1991 base.

The unit cost increase results from the requirement to complete more detailed environmental analysis prior to project implementation. This responds to public and litigation concerns.

This program level will sustain a future timber sale offer level of approximately 8.5 to 9.0 BBF.

Object class information

Salaries and benefits	+455
Travel	+18
Transportation of things	+10
Rent, communications, and utilities	+70
Other services	+285
Supplies, materials, and equipment	+83
Total	+921

Sales Preparation

Objective

To provide a timber sale program that responds to short and long term economic factors and ensures a stable supply of wood products at reasonable prices. To incorporate cost efficiency as a basic decision tool while protecting national forest resource values. To optimize use of the available wood supply through advanced technology and marketing. To incorporate improved practices and procedures to protect the public interest.

Program description

A discussion of each part of the program follows:

Timber Sale Preparation

Although the FY 1991 sale preparation program will work to complete sales to be offered in 1991, much of the work will affect sales to be offered in 1992 through 1994. Recent program levels are:

Fiscal Year	Volume Prep (BBF)	Volume Offered 1/ (BBF)	Volume Sold (BBF)	Volume Harvested (BBF)	Housing Start 2/ (Millions)
1979	12.4	12.4	11.3	10.4	1.8
1980	12.4	12.4	11.3	9.2	1.3
1981	12.2	12.2	11.5	8.0	1.1
1982	11.4	11.1	10.0	6.7	1.1
1983	11.3	11.3	11.1	9.2	1.7
1984	11.9	11.9	10.7	10.5	1.8
1985	11.7	11.5	10.8	10.9	1.7
1986	11.7	11.7	11.0	11.8	1.9
1987	11.5	11.5	11.3	12.7	1.6
1988	11.3	11.3	11.0	12.6	1.5
1989	10.5	10.5	8.4	12.0	1.4
1990 planned	10.4	10.4	10.4	11.5	1.4 3/
1991 planned	10.6	10.6	10.6	11.0	1.5 3/

1/ Includes approximately 0.3 BBF of preparation and release for long term sales.
2/ Department of Commerce.
3/ Administration economic assumptions.
4/ Due to appeals and litigation, the Spotted Owl Temporary Restraining Order delayed the offer and award of 1.6 BBF of new sales in Region 6 and 0.2 BBF in Region 5.

The timber sale preparation and offer volume is comprised of the following:

- New sale volume. New sales begin one to five years before advertisement, so that forest plan objectives can be achieved in a cost effective manner.

The Forest Service monitors regional and forest timber sale levels to maintain a balance between the amount of timber offered for sale and local market demand. The amount of timber offered, but not sold, and the amount of timber under contract, but remaining unharvested, is annually reviewed and used to adjust timber sale plans to meet local market demand. These reviews also consider improving timber sale offerings to reduce the incidence of sales offered but not sold.

- Reoffer volume. During the late 1970s, NFS timber was sold at high prices that were based on anticipated high levels of housing construction and continued inflation. These anticipated conditions did not materialize. As a result, many sales became highly unprofitable for purchasers to operate. The Federal Timber Contract Payment Modification Act, P.L. 98-478, provided these purchasers the opportunity to "buy out" their unprofitable contracts.

Timber sale purchasers returned 9.7 BBF of previously sold but not harvested NFS timber under this law, 95 percent of which was in the Northern, Pacific Northwest, and Pacific Southwest Regions. This returned timber has been offered for resale in an orderly fashion. Due to a variety of economic and environmental considerations, approximately 2.6 BBF of the 3.2 BBF remaining timber will not be reoffered for sale.

Actual and estimated reoffer volume:

FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991
2.3 BBF	2.2 BBF	1.6 BBF	0.4 BBF	0.0BBF	0.0BBF

Regions will be encouraged to offer all viable remaining reoffer volume in FY 1990.

- Salvage sales. The timber salvage sale program provides for timely preparation, sale, and removal of insect infested, dead, damaged, or down timber. These sales provide low priced timber for small timber purchasers, remove material subject to damage from fire or disease, and yield a net return to the U.S. Treasury.

  The Forest Service uses money received from these sales to cover preparation and administration costs of future salvage sales. Authorization was provided in FY 1989 to expand the use of Salvage Sale Funds to prepare timber sales to replace those lost to fires and other causes.

- Shelf volume. In 1982 and 1985, Congress funded Forest Service preparation of a total of one billion board feet of timber sales and authorized the Forest Service to hold them on the shelf ready for sale at a future date. This procedure is used to dampen short term fluctuations in the timber market. If needed, these sales can be offered at an additional cost of about 10 percent of previously incurred costs. Shelf sales are sold each year, but are replaced to maintain a continuous level of shelf volume ready for sale.

At the end of FY 1989, none of the shelf volume that had been previously prepared was available. Approximately 1.0 BBF of shelf volume has been lost to fires or is unavailable due to litigation and appeal.

- Unsold timber sales. Each year timber sales are prepared and offered but not sold in the same fiscal year. In such cases, these timber sales are declared to have been fully prepared and offered for sale. Efforts are made in the following fiscal years to sell it as initially offered. Sometimes modifications are necessary in order for it to sell. When the timber sale is sold, the volume is recorded as sold in that fiscal year. If the sale is not sold, it is withdrawn from the market to be reworked and reoffered for sale two to five years after the initial offer.

Fuelwood and Other Miscellaneous Products

In FY 1989, fuelwood use from NFS land declined 0.028 BBF from FY 1988. The equivalent of 0.672 BBF of fuelwood was sold or given free (0.458 BBF sold, 0.214 BBF free) in FY 1989, compared with 0.7 BBF in FY 1988. Receipts from FY 1989 fuelwood sales were $4.0 million. Fuelwood use should level off in 1990 and should remain constant through 1991. The proportion of sold fuelwood should increase as forests continue to phase in fees for fuelwood permits. Fuelwood and other miscellaneous noncovertible products program costs are borne entirely from timber sale funds.

Special Initiatives

Special timber sale program initiatives to be developed or implemented in FY 1991 are:

- Below-cost timber sales test. The Forest Service will begin the test to determine whether the effects of eliminating certain below-cost timber sales on 12 national forests on economic opportunities, jobs, and revenues can be offset by expanding recreation activities.

- Transaction evidence appraisals. The Forest Service will continue to evaluate the transaction evidence appraisal process throughout the western regions during FY 1991. Implementation will be expanded from use in the Southwest Region to the Northern, Rocky Mountain, and Intermountain regions as data bases for the appraisals are refined and as testing shows them to be a reliable and appropriate method. The Pacific Northwest and Alaska Regions will continue to test and improve the accuracy of their appraisal method. Further expansion of transaction evidence appraisal methods will depend upon observed results in the Northern, Intermountain, Pacific Southwest, and Southwestern Regions.

- Tree Measurement. The Forest Service will continue to use tree measurement where it is more efficient than scaling individual logs. Expansion of this procedure will continue as experience with and acceptance of the technique is gained. Revision of the national timber cruising handbook, including the criteria for tree measurement sales, is proposed in 1990. The criteria will be re-examined with a view towards improving the implementation of tree measurement for timber sales.

- Sales tracking and reporting system (STARS). STARS was implemented nationally in FY 1989 to track the sale planning process from inception through post-sale activities. The program is being upgraded in 1990 and 1991. The reports facilitate timely evaluation of the sales program during preparation, harvest, and sale area improvement. The system will also be used to track defaulted sales, damage assessments, and damage collections.

- Timber sale contract. The final draft will be completed and published in FY 1990. The contract was last revised in 1973. In addition to incorporating significant language changes, the revisions will improve the wording of many easily misunderstood provisions to eliminate disputes and claims.

- Appraisals. The Forest Service will continue to work with cooperating industry representatives to improve the basic data for appraisals. Mill studies will be emphasized in FY 1991 to better determine the end product volumes and values of various species.

- Timber sale cost accounting. In FY 1991, the Forest Service will continue to improve and refine the Timber Sale Program Information Reporting System (TSPIRS). Many of these improvements and refinements are a result of recommendations made by an independent review of TSPIRS by a Big Ten CPA firm.

- Cubic Measurement. The Forest Service has adopted a cubic log scaling rule and will issue a cubic log scaling handbook in 1990. An agency/industry evaluation group is formulating a strategic plan for implementation of cubic units of measurement to replace the board foot measurement units in forest inventory, timber cruising, and log scaling. It will be used where use of cubic units will be more efficient for both the agency and the timber industry. Implementation, where it occurs, will be over a period of years as current technology is converted to the new units. Use of cubic units in Forest Service activities will increase as experience and acceptance occurs.

Cap on Uncut Timber Under Contract in Region 6

Section 2(a)(5)(C) of the Federal Timber Contract Payment Modification Act establishes two controls to limit the uncut volume of timber in Region 6 timber sales:

- The maximum annual timber sale volume of net merchantable sawtimber under contract at the end of each fiscal year can be no more than 12.3 BBF.

- The maximum annual sale program of net merchantable sawtimber under contract at the end of each fiscal year can not to exceed 5.2 BBF. These controls last through FY 1991 or the fiscal year in which the multisale extension program sales in the Pacific Northwest Region are completed, whichever is later.

As of September 31, 1989, approximately 7.1 BBF (includes timber sales past the termination date) of uncut timber was under contract in Region 6 after adjustment for the turned back volume.

Relation to Other Programs
Support from other budget activities is necessary to carry out a timber sale program within a multiple use context.

- Support from land line location, geology, fire protection, wildlife, range, recreation, water, and soils contributes to design and implementation of timber sales to achieve multiple resource objectives.

- Sale preparation and administration need engineering services for transportation planning, survey, design, contract preparation, and construction inspection.

- Rights-of-way sometimes must be acquired for access to timber sales as well as to provide for recreation and other multiple use purposes.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Sales preparation.	$	138,680	115,121	-23,559
	FTE	2,802	2,300	-502

A decrease of $23,559,000 is proposed from the 1991 base.

The FY 1991 timber sales program is based upon the preparation and offer of 10.564 BB, as compared to 10.356 BBF in FY 1990. A three-year summary of the timber sales offer program is as follows:

	FY 1989 Final	FY 1990 Estimate with DCA Reduction	FY 1991 Estimate
		(Billion Board Feet)	
New offer volume	7.993	9.099	9.285
Reoffer volume	.451	0*	0
Subtotal	8.444	9.099	9.285
Salvage sale volume	1.771	.917	.936
Tongass National Forest	.300	.340	.343
Total	10.515	10.356**	10.564

* The amount of volume that will be reoffered is not known at this time. Only a minor portion of the remaining 3.2 BBF will be reoffered over the next three to four years.

**Appropriation action specified 11.129 BBF, but availability of road funds limits sales to 10.356 BBF.

This funding level will support the preparation and offer of 10.564 BBF in FY 1991, but will only support a program level of 8.5 BBF in FY 1992 and beyond.

Since the reoffer volume is basically no longer available, the Forest Service must increase the new offer volume to maintain the total offer level. Preparation of new timber sales is significantly more expensive to offer than many of the previously prepared reoffered sales. The remaining reoffer timber sales will require extensive reworking to comply with new environmental standards. Many of these older sales will be substantially changed and either decreased in size or combined with other sales.

The amount of defaulted sales in FY 1990 is estimated to be about 100-150 MMBF. These sales will be returned to the market in a timely manner, commensurate with local market conditions, funding for timber sale administration, and available workforce. The defaulted volumes will be done within the assigned targets and are not included in the offer volumes.

Included in this program level are the funds and targets to prepare and offer 200 MMBF of timber sales, from Oregon and California grant lands, historically administered by the Forest Service.

Resource support will fund needed work in FY 1991 on sales scheduled for sale in FY 1991 and beyond. Particular emphasis will be given in resource support efforts to resolving environmental issues that have prompted numerous administrative appeals. Minerals, cultural resources, wildlife, fisheries, and soil and water issues will be addressed early in the timber sale planning process to enable completion of the needed inventories and environmental analyses. Fire and range resource coordination will be emphasized to provide information to meet the fuels residue treatment and transitory range opportunities. Land line location will be provided where it is necessary to resolve property boundaries between adjacent land holders.

Object class information

Salaries and benefits	-14,270
Travel	-634
Transportation of things	- 317
Rent, communications, and utilities	- 1,325
Printing	- 79
Other services	- 4,441
Supplies, materials, and equipment	- 2,493
Total	-23,559

Timber sale support is shown on the following:

		1989 Final	1990 Estimate with DCA Reduction	1991 Estimate
			(Dollars in thousands)	
National Forest System				
Inventory planning	$	17,278	21,413	23,021
Thousand acres		16,500	16,500	16,500
Unit cost	$/acre	1.05	1.30	1.40
Silviculture examination	$	27,608	30,766	33,119
Thousand acres		5,373	6,065	5,571
Unit cost	$/acre	5.14	5.07	5.94
Sales preparation	$	104,896	117,699	115,121
Offered MMBF		8,444	9,099	9,285
Unit cost	$/MBF	12.42	12.94	12.40
Harvest administration	$	57,556	66,235	77,575
Harvest MMBF		12,000	11,500	11,000
Unit cost	$/MBF	4.80	5.76	7.05
Timber Sale Pipeline Initiative	$	0	14,836	0
Subtotal, Timber Sales Program	$	207,338	250,949	248,836
Unit cost	$/MBF	24.55	27.58	26.80
Support to the Timber Sales Program				
Minerals	$	1,396	1,385	1,396
Forest fire protection	$	4,564	4,051	5,026
Recreation	$	10,358	12,370	12,844
Wildlife and fish	$	9,470	9,672	11,869
Range	$	881	986	1,038
Soil and water	$	8,619	9,031	9,026
Land line location	$	20,000	18,355	20,817
Subtotal, Timber Support	$	55,288	55,850	62,016
Unit cost	$/MBF	6.55	6.14	6.68
Road Construction				
Forest Service Construction	$	120,028	130,432	128,681
Purchaser construction	$	(81,193)	(112,000)	(116,249)
Purchaser roads constructed by FS	$	2,762	4,018	4,859
Subtotal, Road Construction	$	122,790	134,450 2/	133,540
Timber salvage fund	$	47,561	59,997	32,914
Offered MMBF		1,771	917	936
Resource Management, Timber Receipts	$	29,252	0	0
Tongass Timber Supply Fund	$ 1/	35,034	36,955	41,367
Offered MMBF		300	340	343
TOTAL, Timber Sales Program	**$**	**497,263**	**538,201**	**518,673**
Timber offered	**MMBF**	**10,515**	**10,356**	**10,564**
Average unit cost	**$/MBF**	**47.29**	**51.97**	**49.10**

1/ Does not include reforestation and stand improvement and any other Tongass National Forest resource activities that are included in the Tongass Timber Supply Fund (TTSF) appropriation. See Permanent Appropriations for more information.

2/ Does not include road funding in other programs that would allow accomplishment of 11,129 BBF.

Harvest Administration

Objective

To minimize adverse environmental impacts and administer wood fiber harvesting in accordance with timber sale contracts and permits. To protect the government from fraud, abuse, and waste.

Program description

Timber sale contracts are administered to meet land management objectives, fulfill contractual obligations, and protect the public's interests. Administration includes the following:

- Approve and monitor purchaser activities for contract compliance and sale objectives.
- Negotiate and resolve disputes concerning contract performance.
- Measure (scale) logs to determine payments.
- Ensure that contract payments are adequate for the expected level of activity.
- Maintain log accountability from stump to mill.
- Enforce laws applicable to the purchasers' operations and contracts.

Increase for 1991

	1991 Base	1991 Estimate	Increase
		(Dollars in thousands)	
Harvest administration . . . . . . $	69,304	77,575	+8,271
FTE	1,391	1,591	+200

An increase of $8,271,000 is proposed from the 1991 base.

This program level provides for full administration of approximately one million timber sale contracts and permits. Timber harvest levels are expected to remain relatively high in FY 1991 as a result of continued strong demand for national forest timber.

Harvest administration workloads have increased due to increased numbers of timber sales reviewed under the multiyear extension program, defaulted sales, and the complexities of the log accountability and export programs. Full and complete administration is necessary to decrease the risk of waste, fraud, and abuse during timber sale harvest activities.

The increased costs of the FY 1991 program are a direct result of completion of most of the 1987 and 1988 fire salvage sales in Region 5 and Region 6 which were administered with Salvage Sale funds. The equivalent volume of harvest is now coming from regular timber sales and must be paid from appropriated funds.

In FY 1989, timber purchasers defaulted on 120 MMBF of high valued timber sales. There is currently 1.1 BBF of unharvested high value timber under contract with termination dates in the next one to three years. Most of the work to resolve these defaulted contracts will take place in FY 1990.

The Forest Service's 1987 debarment policy is continuing to identify timber companies and individuals involved in theft, forgery, bribery, and habitual or intentional contract violations. During 1989, 23 companies and individuals were debarred, with debarment proposed for another individual. By the end of FY 1989, the Suspension and Debarment List contained the names of a total of 43 companies and individuals who had been debarred; one that has been proposed for debarment; and six who had been suspended.

Object class information

Salaries and benefits.	+5,644
Travel.	+230
Transportation of things.	+112
Rent, communications, and utilities. . .	+397
Other services.	+1,326
Supplies, materials, and equipment. . .	+562
Total	+8,271

Reforestation and Stand Improvement

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec (-) from Base
Total Reforestation and Stand Improvement (All Sources)						
Reforestation						
National Forest System .... $	**22,527**	**25,680**	**25,399**	**27,624**	**22,941**	**-4,683**
Reforestation Trust Fund .... $	25,000	25,000	25,000	25,000	25,000	0
Tongass Timber Supply Fund .... $	35	0	0	0	0	0
KV .... $	113,787	152,033	152,033	158,737	143,556	-15,181
Resource Management, Timber Receipts .... $	9,751	0	0	0	0	0
Total .... $	**171,100**	**202,713**	**202,432**	**211,361**	**191,497**	**-19,864**
Timber Stand Improvement						
National Forest System .... $	**26,899**	**24,156**	**23,892**	**25,196**	**19,415**	**-5,781**
Reforestation Trust Fund .... $	5,000	5,000	5,000	5,000	5,000	0
Tongass Timber Supply Fund .... $	930	920	920	960	2,600	+1,640
K-V .... $	30,817	36,987	36,987	38,639	45,200	+6,561
Total .... $	**63,646**	**67,063**	**66,799**	**69,795**	**72,215**	**+2,420**
Nursery and Tree Improvement and Operations .... $	**15,859**	**18,346**	**18,145**	**18,973**	**17,435**	**-1,538**
Total, National Forest System ...... $	**65,285**	**68,182**	**67,436**	**71,793**	**59,791**	**-12,002**
Undistributed Reforestation Trust Fund .... $	1,171	0	0	0	0	0
Total, Reforestation Trust Fund .... $	31,171	30,000	30,000	30,000	30,000	0
Total, Tongass Timber Supply Fund .... $	965	920	920	960	2,600	+1,640
Total, K-V .... $	144,604	189,020	189,020	197,376	188,756	-8,620
Total, Resource Management, Timber Receipts .... $	9,751	0	0	0	0	0
Total .... $	**251,776**	**288,122**	**287,376**	**300,129**	**281,147**	**-18,982**
FTE 1/	**972**	**1,006**	**1,006**	**1,006**	**900**	**-106**

1/ National Forest System FTEs only

Reforestation and Stand Improvement Acres (All Sources)

	1989 Final	1990 Estimate with DCA Reduction	1991 Estimate	Inc. (+) or Dec. (-) from 1990
		(Acres in thousands)		
Reforestation				
NFS/RTF	143	122	119	-3
Tongass timber supply fund	0	0	0	0
K-V	327	336	360	+24
Resource management, timber receipts	6	19	5	-14
Total	**476** 1/	**477**	**484**	**+7**
Types of Reforestation				
Planting	297	300	300	0
Seeding	10	7	10	+3
Nat. Reg. w/site prep.	132	124	132	+8
Nat. Reg. w/o site prep.	30	39	35	-4
Tongass Nat. Reg. w/o site prep.	7	7	7	0
Total	**476**	**477**	**484**	**+7**
Timber stand improvement				
NFS/RTF	**197**	**176**	**125**	**-51**
Tongass timber supply fund	1	2	6	+4
K-V	146	178	196	+18
Resource management, timber receipts	1	0	0	0
Total	**345**	**356**	**327**	**-29**

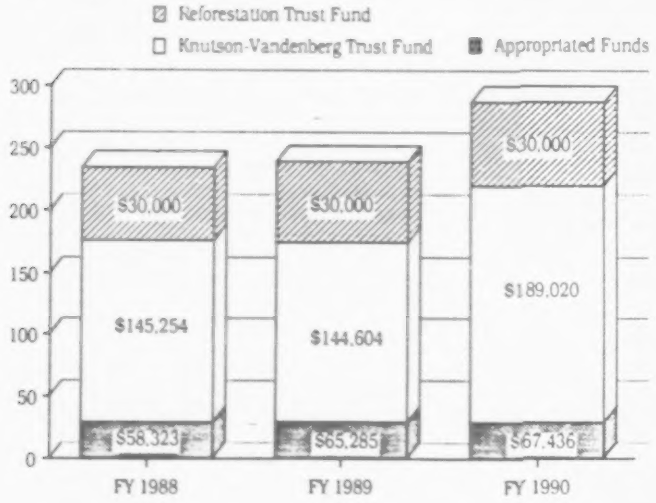
1/ An additional 16,300 acres were reforested by constributions from other sources.

General

Reforestation and stand improvement activities are used to adequately stock forest lands and maintain timber productivity levels sufficient for sustained yield management of NFS lands. The objective is to increase the growth rate and product quality of timber growing on national forests to levels consistent with environmental quality, multiple resource use objectives, and social and economic benefits and costs.

The reforestation and stand improvement program is financed with appropriated funds, reforestation trust funds, and Knutson-Vandenberg funds (K-V). Ten percent of the resource management timber receipts generated in FY 1988 will be dedicated to these activities during FY 1989 and FY 1990. These funds are used to reforest harvested areas, unsuccessful plantations and areas damaged by fire, insects, or disease, and to release planted trees from competing vegetation or overcrowding. Expenses for seedlings purchased from Forest Service, State, and private nurseries are also included. Contracts for site preparation, animal damage control, fertilization, tree planting, release, precommercial thinning, and a limited amount of tree pruning are charged to these funds.

Sources of Funding for Reforestation and Stand Improvement (1988-1990)



Reforestation

Objective

To annually reforest an area equal to the area annually deforested.

Program description

As of October 1, 1989, an estimated 1.225 million acres of NFS land needed reforestation because of timber harvest; natural disasters such as fire, storms, insects, and disease; or previously unsuccessful reforestation treatments. Such reforestation needs accrue continually at the rate of about 500,000 acres per year.

The Forest Service meets these needs through seeding, planting, and preparing sites to encourage natural regeneration. Some areas regenerate naturally without special treatment or investments.

The K-V funds are used to purchase seedlings for reforesting timber sale areas. Seedlings to be planted on all other areas, such as areas burned over by wildfire, are purchased with funds from the National Forest System appropriation and reforestation trust funds.

The estimate of lands needing reforestation changes each year. These changes result from such things as timber harvests and new needs created by fire, insects, and diseases. Following periodic on the ground examination to verify the reforestation success, lands are removed from the needs inventory. The following table shows changes in the reforestation needs since FY 1989, and estimates of FY 1991 needs.

Reforestation Needs 1/

	Actual and Projected Thousand acres	Prior Years Projected Thousand acres
Balance, October 1, 1988, actual	1,176	1,160
New needs in FY 1989	541	500
Accomplishments in FY 1989	492 2/	447
Balance, October 1, 1989	1,225	1,213
Balance, October 1, 1989, actual	1,225	1,213
Projected new needs in FY 1990	465	
Projected accomplishments in FY 1990	473	
New Balance, October 1, 1990	1,217	
Projected new needs in FY 1991	450	
Projected accomplishments in FY 1991	484	
New Balance, October 1, 1991	1,183	

1/ Includes natural regeneration without site preparation unless noted.

2/ 16,000 acres completed with contributed resources.

Current needs have significantly increased above the desirable level of about one million acres. This is a result of the record harvest levels and the unprecedented western fires of 1987, 1988, and 1989. It is expected that it will require three to five years to reduce the needs to the desirable level.

There is a two to three year lag between the time an area is harvested or deforested and when it is reforested. This lag is due to factors that affect timing such as salvage harvesting, site preparation (especially slash disposal), contracting, the collection of seed, and the production of seedlings for that specific site.

Reforestation is a capital investment opportunity. Cost effectiveness is therefore a primary concern in planning and scheduling work. The program is guided by efforts to improve benefit-cost ratios through analysis of regeneration techniques and related work.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Reforestation. . . . .$	27,609	22,941	-4,668
FTE	290	270	-20

A decrease of $4,668,000 is proposed from the 1991 base.

With Reforestation Trust Funds of $25,000,000, this program level provides for the reforestation of 119,000 acres.

The FY 1991 program for reforestation provides for the site preparation, planting, and seeding of 119,000 acres at a unit cost of $403 per acre as compared to 122,000 acres at an estimated unit cost of $431 per acre in the FY 1991 base. This acreage, combined with acreage accomplished using KV funds, will total 484,000 acres. This is the largest reforestation program ever proposed and is based upon the need to quickly reforest areas destroyed by the recent severe fires in the western regions and the areas destroyed by Hurricane Hugo and insects in the southeast. As a result, the current total inventory will decrease by approximately 34,000 acres to 1,183,000 acres.

Much of the cost decrease in unit costs is due to shifts in the type of reforestation and to other cost reduction measures; such as, earlier advertisement of contracts and larger projects. The proposed program for FY 1991 will accomplish the scheduled reforestation of areas associated with the severe fires of 1987 and 1988. Most of these fires occurred in the western regions where steeper terrain and the prohibitions against the use of herbicides has increased some unit costs.

The current needs level at the end of FY 1991 is estimated to be 1,183,000 acres, compared to a projected 1,217,000 acres at the end of FY 1990.

Object class information

Salaries and benefits	-722
Travel	-153
Transportation of things	-63
Rent, communications, and utilities	-382
Other services	-606
Supplies, materials, and equipment	-2,639
Lands and structures	-103
Total	-4,668

Timber Stand Improvement (TSI)

Objective

To improve timber growth and vigor by maintaining stocking control and removing competing vegetation.

Program description

Timber stand improvements increase timber growth or product quality by thinning to remove excess trees, removing competing vegetation, and fertilizing stands at desirable levels.

Each year from 1980 to 1989, an average of about 350,000 acres of new stands were created by reforestation. As these new trees grow, most will need to be released (approximately 300,000 acres) from competing vegetation and/or thinned to maintain healthy, vigorous stands.

Young unmerchantable stands of trees are thinned, usually with chainsaws or hand tools, to remove surplus and poor quality trees and allow the remaining trees to grow at optimum rates. Hand tools, prescribed fire, machinery, and herbicides, where allowed, are used to remove or retard growth of competing vegetation, thus releasing trees to increase growth rates or to favor desirable species.

As of October 1, 1989, 1.222 million acres needed timber stand improvement to improve growing conditions. Of this amount, about 422,000 acres needed release from competing vegetation and 712,000 acres needed thinning. The remaining acres (about 88,000) needed fertilization or pruning.

A maintenance level of about one million acres of TSI needs is a desirable working level. This allows adequate lead time for planning and project preparation, and flexibility to adjust to changes.

Timber Stand Improvement Needs

	Actual and Projected Thousand acres	Prior Years Projected Thousand acres
Balance, October 1, 1988, actual	1,282	1,228
New needs in FY 1989	288	350
Accomplishments in FY 1989	348 1/	363
Balance, October 1, 1989	1,222	1,215
Balance, October 1, 1989, actual	1,222	
Projected new needs in FY 1990	350	
Projected accomplishments in FY 1990	353	
New Balance, October 1, 1990	1,219	
Projected new needs in FY 1991	350	
Projected accomplishments in FY 1991	327	
New Balance, October 1, 1991	1,242	

1/ 3,300 acres completed with contributed resources.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Timber stand improvement. . . .$	25,193	19,415	-5,778
FTE	394	330	-64

A decrease of $5,778,000 is proposed from the 1991 base.

With $5,000,000 from the Reforestation Trust Fund, this program level provides for timber stand improvement of 124,800 acres at $196 per acre, compared to 176,000 acres at $169 per acre in the 1991 base program, a decrease of 51,200 acres. The increased per acre rate in FY 1991 is a result of higher contract costs related to the use of hand and mechanical methods as opposed to herbicides.

The total program will accomplish 36 per cent of the estimated annual need of 350,000 acres and result in a current need of 1,242,000 acres by October 1, 1991. This level of stand improvement will increase annual growth by 15 to 25 percent on the acres treated. Forest plans propose to treat annually 350-400 thousand acres in order to sustain an 11 to 12 BBF of harvest.

Object class information

Salaries and benefits	-2,314
Travel	-51
Transportation of things	-25
Rent, communications, and utilities	-150
Other services	-2,775
Supplies, materials, and equipment	-403
Lands and structures	-60
Total	-5,778

Nursery and Tree Improvement Operations

Objective

To improve the genetic quality of seed and planting stock used on NFS lands. To produce high quality planting stock in appropriate numbers and species for timely reforestation.

Program description

Tree Improvement Program
The two major goals of this program are: to apply sound genetic principles to all silvicultural prescriptions; and to provide seed for seedling production that will yield adaptable, fast growing, high quality, pest resistant trees. Forest tree improvement programs have been implemented to varying degrees in all regions. Seed collection zones and/or breeding zones, based on physiographic and biological data, have been delineated in all regions to ensure use of locally adapted seed.

Intensive tree improvement programs are implemented for those species and breeding zones where investments can be justified. These programs include tree selection, seed orchard establishment and management, progeny testing, and selective breeding. These programs can increase growth by an estimated five percent on low productivity sites and by ten percent on high productivity sites in the first generation alone.

Improved, high quality superior stock that has been developed in the genetic tree improvement program is being grown in Forest Service nurseries. These improved seedlings are projected to increase growth and yields in the future by at least 10 to 15 percent.

Nursery Operations
Ten bareroot and two container nurseries produce high quality seedlings to meet reforestation needs. These nurseries must produce seedlings that meet the specific species and seed source requirements peculiar to the individual areas to be reforested.

Seedling production costs at all but one nursery are charged to the working capital fund (WCF) and are, in turn, repaid as a cost of seedlings in the reforestation program. Any new facilities at these nurseries are funded from facilities construction funds and turned over to WCF for operation and maintenance. The nursery improvement funding in this program is for the replacement, upgrading, and conversion of facilities not covered under the facilities construction program. Once the specific repair or replacement has been completed, the project is added to the WCF for that nursery.

Production over the past 10 years has averaged 128.7 million bareroot and 5.7 million container seedlings. Production during FY 1989 was 120.4 million bareroot and 5.2 million container seedlings. Forest Service seedling production is supplemented through contracts with State and private nurseries, which averaged 31.3 million seedlings per year over the past 10 years and 42.4 million during FY 1989. The combined production of bareroot seedlings and containerized stock will be about 125 million seedlings for the FY 1991 program and about 130 million seedlings for the FY 1992 program.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Nursery and tree improvement operations	$	18,973	17,435	-1,538
	FTE	322	300	- 22

A decrease of $1,538,000 is proposed from the 1991 base.

This program level will allow for the accomplishment of health and safety needs at the 10 nurseries and eliminate defective and worn out facilities not covered by the Working Capital Fund. The proposed funding will maintain the tree improvement program at a level where all past investments in seed orchards and progeny tests will be realized (except damage caused by Hurricane Hugo). New seed orchards will be established and progeny tests to evaluate genetic worth will be conducted to the extent possible with available funds. This funding level also provides for the Isozyme Laboratory that will trace seed source from progeny to parent.

The nursery management program will concentrate on the continued production of high quality, superior stock for planting within specific tree breeding zones, and securing additional cooler storage facilities to keep up with the increased demands for high quality seedlings for the next three to five years. This stock will be used to reforest lands denuded by the recent severe fire seasons, and by Hurricane Hugo in Regions 8 and 9. The tree improvement program will concentrate on establishing and managing seed orchards and progeny tests for the highest priority breeding zone not yet covered.

Monitoring programs to track the production of high quality superior stock, from the establishment of seed production areas to outplanting, will increase in size. The establishment of the Electrophoresis Laboratory at the Placerville Nursery will provide additional genetic information on the relative amounts and geographic patterns of natural variation for evaluation of timber stand management practices. This program emphasis will continue to increase in FY 1991.

Object class information

Salaries and benefits	-775
Travel	-28
Transportation of things	-13
Rent, communications, and utilities	-48
Other services	-466
Supplies, materials, and equipment	-172
Lands and structures	-36
Total	-1,538

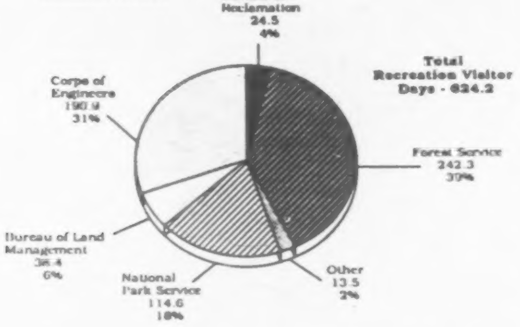
Recreation Use

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)			
Recreation Management......... $	111,583	116,796	115,519	120,948	143,083	+22,135
Million PAOT - days	120.9	105.0	104.0	104.0	131.7	+27.7
FTE	2,610	2,793	2,793	2,793	2,961	+168
Wilderness management......... $	14,692	17,585	17,393	18,179	20,135	+1,956
Million acres	32.5	32.5	32.5	32.5	32.5	0
FTE	243	269	269	269	279	+10
Cultural resource management......................... $	15,979	18,343	18,142	18,964	21,006	+2,042
Million acres inventoried	1.5	1.2	1.1	1.1	1.2	0
FTE	270	292	292	292	306	+14
Total NFS.......................... $	142,254	152,724	151,054	158,091	184,224	+26,133
Million RVDs	252.5	247.1	244.7	244.7	249.6	+4.9
FTE	3,123	3,354	3,354	3,354	3,546	+192
Total, Resource management, timber receipts........................ $	9,750	0	0	0	0	0
Operation and maintenance of recreation facilities.............. $	0	0	0	0	9,084	9,084
Total, All funds........................ $	152,004	152,724	151,054	158,091	193,308	+35,217

General

The National Forest System (NFS) occupies a land area larger than the State of Texas and provides more outdoor recreation than any other Federal agency. In FY 1989 the Forest Service provided 252.5 million recreation-visitor-days (RVDs) of use on Federal lands (one RVD equals 12 hours of use). This is an increase over the 242.3 million RVDs provided in 1988, which was 39 percent of all use on Federal lands. Activities range from individuals and organized groups camping at developed sites, to backpackers hiking on remote hiking trails, to winter sports enthusiasts skiing at commercially operated resorts, to sightseeing along forest roads and waterways.

1988 Recreation Visitor Days (RVDs) by Federal Agency (Million RVDs)



The Forest Service will continue to strengthen recreation related programs through the implementation of the National Recreation Strategy. Tourism is one of the top three industries in 39 States. Thirty-four of these States contain NFS lands which contribute significantly to local tourism industries. The Strategy emphasizes the improvement of customer service and satisfaction, formulation of partnerships with others, increased interpretation and environmental education, and enhancement of professionalism through employee training. The focus for the strategy in FY 1991 will be to:

- Implement a nationwide "Access" program to enhance opportunity for the disabled forest users.

- Utilize the "Windows on the Past" program to interpret cultural resources for public enjoyment and education.

- Designate and promote Forest Service Scenic Byways.

- Foster a "people serving people" approach to recreation management.

- Expand partnerships to increase customer satisfaction.

- Study prospective rivers and recommend, by 1993, 200 rivers for designation in the Wild and Scenic River system.

Visitors to the National Forests enjoy viewing diverse landscapes and ecosystems in 44 states plus Puerto Rico and the Virgin Islands

An integral component of the National Recreation Strategy is the challenge cost-share program which encourages the public, including both nonprofit and profit entities, to become partners with the Forest Service in recreation projects on the national forests. A total of $4.0 million is planned for recreation challenge cost-share projects in FY 1991 in the areas of recreation management, wilderness management, and cultural resources management. An additional $3.8 million will be utilized for trail maintenance, trail construction, and recreation construction challenge cost-share projects. The Forest Service and partners will cooperate to jointly provide cash, supplies, equipment, and/or labor. Partner contributions are expected to exceed a two to one match.

At the heart of the Recreation Strategy is the effort to "Provide outdoor recreation opportunities to all the people, strenghtening our service to urban residents, ethnic minorities, the disabled and disadvantaged, and the elderly and the young." Many national forests are identifying and reaching out to meet the need for accessibility and other specialized recreation opportunities.

Accessibility to National Forest resources and recreational opportunities includes strengthening our service to urban resident , ethnic monorities, the disabled and disadvantaged, and the elderly and young.

Recreation Management

Objective

To provide a spectrum of high quality outdoor recreation opportunities. To manage, operate, and maintain facilities and services necessary to meet the demands for public outdoor recreation consistent with good land stewardship. To enhance customer service and satisfaction

Program description

The National Forest Sytem (NFS) provides a variety of recreation opportunities for the public. Driving for pleasure, whitewater rafting, backpacking, hunting, and fishing are very popular. Recreation facilities in the NFS have a combined capacity of 1.7 million people-at-one-time (PAOT), or 158 million PAOT-days. PAOT-days are determined by multiplying a site's designed capacity for PAOT by the number of days per year that a site is available for use. These facilities include campgrounds, swimming areas, picnic grounds, boating sites, interpretive sites, fishing sites, winter sports sites, trailheads, playgrounds and parks, and observation sites.

The Forest Service manages a variety of congressionally designated areas such as National Recreation Areas, National Wild and Scenic Rivers, and National Monuments. In addition, designation of scenic byways through the National Forest Scenic Byways program will link the American people to outdoor recreation opportunities on NFS lands. The designation of these byways offers recreational motorists a showcase of outstanding scenic beauty and well-managed, changing landscapes.

In support of the President's goals for "Building A Better America," the Forest Service uses interpretation and environmental education to help create a renewed public outdoor land ethic and "meet th continuing demand for outdoor recreation." Forest visitors learn about recreation opportunities and multiple use management through direct contact with forest interpreters at visitor centers and other developed sites. Interpretive signs, brochures, and programs are also used to enhance visitor satisfaction and understanding.

The Coronado National Trail Scenic Byway, Apache-Sitgreaves National Forest, Arizona is one of over 60 designated national forest roads which introduce the American public to our rich cultural, geological and biological heritage.

The Forest Service issues and administers permits to private sector recreation operators. These operators/facilities provide for one-tenth of the total recreation use on NFS land. The number of permitted operations in FY 1989 were:

	Number
Recreation residences	15,700
Ski areas	165
Organization camps	478
Lodges and resorts	547
Outfitters and guides	2,600

User fees are charged at about one-third of the NFS family campgrounds, groups campgrounds, reserved picnic areas, and swimming sites as authorized by the Land and Water Conservation Fund (L&WCF) Act of 1965, as amended. The remaining facilities either do not offer the amenities currently required by the L&WCF Act for a charge area, or fee processing is uneconomical due to size or location. User and special use fees paid for NFS recreaion use were $38.0 million in FY 1989.

The FY 1991 recreation program includes the below-cost timber sale test. This effort will test whether expansion of recreation opportunities and fees generated on 12 national forests can offset the negative economic impacts of phasing out certain below-cost timber sales. Special exhibit 15 provides further detail.

Through partnerships, the National Forest System can offer more recreation activities and increased customer satisfaction.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Recreation management	$	120,948	143,083	+22,135
	FTE	2,793	2,961	+168

An increase of $22,135,000 is proposed from the 1991 base.

This funding level will allow the agency to offer approximately 131.7 million PAOT-days of developed recreation site opportunity, which equates to 83 percent of the 158 million capacity, compared to 104 million PAOT-days in the 1991 base. The Forest Service will emphasize customer satisfaction through improved administration and maintenance at available sites. Some maintenance will continue to be deferred.

Partnerships will be a cornerstone of the recreation program. Cooperation with adjacent landowners, other agencies, and private entities will ensure the efficient use of resources. Operation and maintenance of developed and dispersed areas will be increased through the work of volunteers and by the use of $4 million for challenge cost-share projects in recreation management, wilderness management, and cultural resource management.

Developed and dispersed recreation management will also be funded with $9,084,000 of the Operation and Maintenance of Recreation Facilities account. These funds will be used for recreation facility and area operation and maintenance, and will produce an additional five million PAOT-days. See the Operation and Maintenance of Recreation Facilities section of this document for additional information.

Object class information

Salaries and benefits	+6,670
Travel	+814
Transportation of things	+368
Rent, communications, and utilities	+ 1,934
Printing and reproduction	+148
Other services	+9,148
Supplies, materials, and equipment	+3,053
Total	+22,135

Wilderness Management

Objective

To preserve and protect the resource values on designated wilderness areas on NFS lands. To provide wilderness experience opportunities to the public.

Program description

Over 32 million acres of NFS lands have been designated by Congress as part of the National Wilderness Preservation System. NFS wilderness comprises 78 percent of wilderness in the contiguous 48 states. There are 354 wilderness areas in 36 states with a total land area about the size of Alabama. A total of 11.6 million recreation-visitor-days were recorded in wilderness areas in FY 1989, which is about five percent of total recreation use.

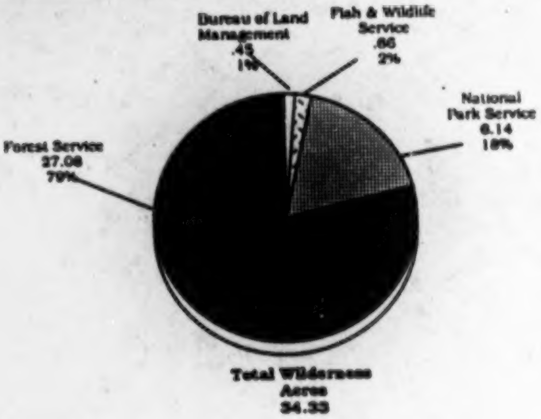
Simply designating a wilderness does not assure its preservation. Management is necessary to protect the resource, with wilderness values guiding such activities as grazing, access to private lands, mining, fish and wildlife habitat management, insects and disease control, fire management, and cultural resource management.

The Forest Service preserves wilderness, where natural processes are allowed to operate freely and the public visits on a temporary basis. Wilderness is managed to provide for scientific, scenic, educational, conservation, historical, recreation, and other uses consistent with wilderness resource protection. Enhancement of true wilderness experiences is accomplished through visitor education about wilderness values and how to protect them.

The Forest Service inventories resource conditions to assess negative impacts on environmental values and then provides for rehabilitation of damaged areas.

One acre in six of National Forest System lands is managed as part of the National Wilderness Preservation System. This view is a portion of the Uintas Wilderness, Wasatch-Cache National Forest, Utah.

The National Wilderness Preservation System in Lower 48 States (Million Acres)



Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Wilderness management. . . . . .$	18,179	20,135	+1,956
FTE	269	279	+10

An increase of $1,956,000 is proposed from the 1991 base.

This program level will provide for the highest priority management needs of wilderness; including scientific, scenic, educational, conservation, historical, and recreation uses. Wilderness resource monitoring will be improved, particularly regarding air quality impacts and the effects of aircraft overflight on visitors.

The Forest Service will provide primitive recreation opportunities while protecting the wilderness characteristics of the land. Wilderness rangers and managers will use maps, brochures, permits, and education programs to accomplish management objectives and to comply with wilderness legislation.

Accomplishments will be increased through the work of volunteers and the implementation of challenge cost-share projects.

Object class information

Salaries and benefits.	+790
Travel	+145
Rent, communications, and utilities.	+130
Other services	+609
Supplies, materials, and equipment.	+282
Total	+1,956

Cultural Resource Management

Objective

To protect, manage, and interpret the cultural resources on NFS lands. To implement the requirements of laws and regulations such as the National Historic Preservation Act and the Archeological Resources Protection Act. To help meet resource targets in timber, range, minerals, and special uses.

Program description

The Forest Service directs and coordinates cultural resource activities on NFS lands. In addition to providing cultural resource clearances for NFS lands scheduled for ground disturbing projects, the National Historic Preservation Act charges the Agency with several other important tasks. These include inventory of nonthreatened sites, nominations to the National Register of Historic Places, preservation and stabilization of significant properties, law enforcement, and cultural resource interpretation.

Field surveys have been conducted on over 21 million acres of NFS land since 1971. In FY 1989, 75 percent of the 1.5 million acres surveyed and cleared for resource activity was accomplished in support of timber, minerals, and energy resource development programs. Over 160,000 cultural resource properties have been recorded from these surveys and from records and studies. Thirty-seven properties were submitted to the National Register of Historic Places in FY 1989. An additional 10,000 properties are eligible for listing.

Increased emphasis is being placed on the interpretation and preservation of important cultural properties through the Windows on the Past program. This effort educates the public about the nation's rich cultural heritage and will increase enjoyment, education, and protection of cultural and historical resources.

The loss of cultural resources to vandalism, artifact theft, and illegal digging is a great concern in many parts of the country. Since passage of the Archeological Resources Protection Act in 1979, Forest Service special agents have been directly involved in investigations which led to convictions in several States.

Photographic records of historic sites and uses in the national forest are one component of the cultural resource management program.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Cultural resource management	$	18,964	21,006	+2,042
	FTE	292	306	+14

An increase of $2,042,000 is proposed from the 1991 base.

Inventory and evaluation of the cultural resources associated with proposed high priority earth disturbing projects will be completed. Timber, road, mineral, energy, and recreation project clearances will be emphasized. Mitigation of project impacts will be financed by the benefiting activity. As appropriate, nominations will be made to the National Register of Historic Places.

Cultural resource law enforcement activities will focus on illegal digging and removal of artifacts from NFS lands. Continued use of students, volunteers, and para-professionals for site inventory, evaluation, excavation, and interpretation will augment the cultural resource program. Accomplishments will also be increased through challenge cost-share projects.

Object class information

Salaries and benefits	+354
Travel	+208
Transportation of things	+73
Rent, communications, and utilities	+180
Other services	+1,007
Supplies, materials, and equipment	+201
Lands and structures	+19
Total	+2,042

Wildlife and Fish Habitat Management

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Wildlife and fisheries administration and resource coordination	$	34,682	38,500	38,079	39,786	39,925	+139
	FTE	518	373	373	373	373	+0
Wildlife habitat improvement	$	6,951	11,000	10,880	11,378	14,815	+3,437
	Acres	114,337	123,000	122,000	122,000	164,373	+42,373
	Structures	6,900	4,800	4,734	4,734	6,414	+1,680
	FTE	130	450	450	450	496	+46
Inland fish habitat improvement	$	6,302	7,500	7,418	7,767	8,646	+879
	Acres	2,407	5,982	5,910	5,910	6,738	+828
	Structures	2,063	4,485	4,394	4,394	5,048	+654
	FTE	162	179	179	179	183	+4
Endangered, threatened, and sensitive species habitat improvement	$	7,150	11,000	10,880	11,392	12,000	608
	Acres	38,253	32,900	32,447	32,447	32,447	0
	Structures	1,313	1,090	1,016	1,016	1,016	0
	FTE	221	288	288	288	288	0
Anadromous fish habitat improvement	$	9,809	13,500	13,352	13,960	8,866	-5,094
	Acres	5,112	8,868	8,775	8,775	5,734	-3,041
	Structures	4,595	6,684	6,592	6,592	4,307	-2,285
	FTE	198	229	229	229	180	-49
Total Wildlife & Fish Habitat	$	64,894	81,500	80,609	84,283	84,252	-31
	FTE	1,229	1,399	1,399	1,399	1,402	+3
Resource management, timber receipts	$	19,501	0	0	0	0	0
Total, All Funds	$	84,395	81,500	80,609	84,283	84,252	-31

General

A significant portion of the Nation's wildlife and fish habitat is located on National Forest System (NFS) lands as follows:

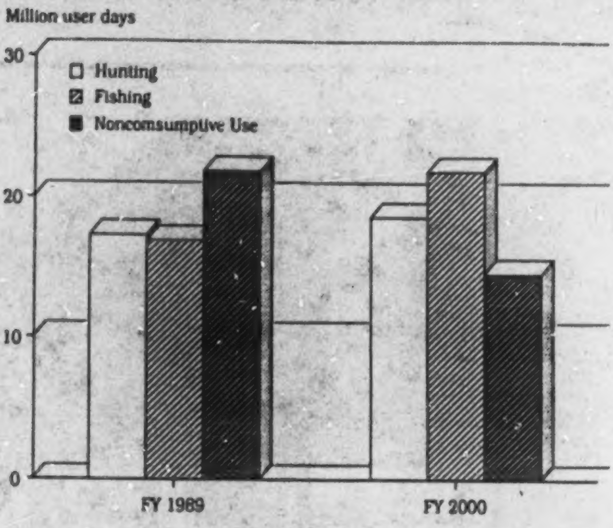
- 80 percent of the elk and bighorn sheep habitat in the lower 48 States;
- 12 million acres of waterfowl habitat;
- 28 million acres of wild turkey habitat;
- 2.2 million acres of ponds, reservoirs, and lakes;
- 128,000 miles of fishable streams;
- 16,500 miles of coast and shoreline.

In FY 1989, NFS lands provided over 40 million wildlife and fish user-days (12-hour days). Approximately 34 million were directly associated with hunting and fishing. Current hunting use throughout the NFS is estimated at 17.2 million user-days with a net economic value of $482 million.

The Lolo National Forest's Kookosint Bighorn Sheep Viewing Site, a highway pull-off, was developed to provide a safe viewing place.

As access to private land declines, particularly near urban centers, the national forests will provide one of the best opportunities for increased public hunting and fishing. Public demand in user-days for wildlife and fish is expected to increase by 30 percent from FY 1989 to FY 2000. This trend is shown on the following graph.

Trend of Wildlife and Fish User-Days on the National Forest System



The wildlife and fish habitat management goal on NFS lands has three components:

- Maintain healthy habitats to support self-sustaining populations of all existing native and desired non-native vertebrate species.
- Improve the habitat productivity for those species highly desired by the public such as deer, elk, wild turkey, trout, bass, and salmon.
- Maintain plant and animal communities.

This goal is primarily accomplished through capital investments, which includes activities such as seeding, planting, burning, silviculture, aquatic habitat development, and coordination with other resource management investments. Many activities are conducted in cooperation with State wildlife and fish agencies, private individuals, conservation groups, and various local, State, and national agencies. The Forest Service has formalized partnerships with 43 State fish and wildlife agencies and 18 national conservation organizations.

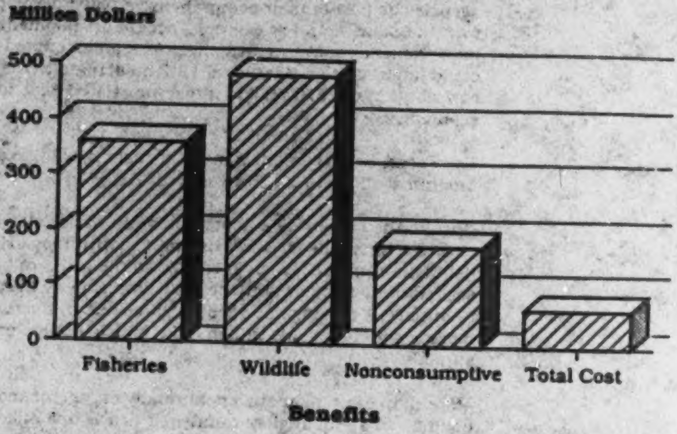
Aquatic habitat protection and restoration, in coordination with well designed habitat improvement projects, can increase habitat productivity and angling opportunities. Many such opportunities have been identified in forest plans and coordinated with State fish and wildlife agencies as part of their comprehensive plans developed in accordance with the Sikes Act. For example, access development and habitat improvement could increase angler use an estimated 25 percent. This could amount to an additional 12.7 million angler-days and the contribution of $270 million in fishing related expenditures to local economies.

The Forest Service has two major thrusts in wildlife and fisheries programs: "Rise to the Future" and "Get Wild".

"Rise to the Future" is a fishery program whose strategy would respond to future demands for sport fishing opportunities. Half of the cold water fish habitat in the Nation is located in the NFS. Sport fishing is the second most popular outdoor recreation activity in America. In addition to hundreds of nongame species, game fish in the national forests include salmon, trout, catfish, pike, muskellunge, bass, walleye, and sunfish.

More than 60 million anglers annually engage in some type of sport fishing. In 1985, anglers numbered nearly one billion angler-days (an angler-day equals one-third of a fish user-day) and spent over $28 billion pursuing their sport. Demand is expected to increase 90 percent by the year 2030. Annually, approximately 750,000 jobs are associated with the recreational fishery industry. Total fishing use is estimated at 16.9 million user-days with a net economic value of $360 million. Many conservation organizations have supported the Agency's direction under the "Rise to the Future" program. Formal memorandums of understanding have been signed with Trout Unlimited, Federation of Fly Fishers, Sport Fishery Institute, and the Bass Angler Sportsman Society.

Wildlife and Fisheries Benefits and Costs - 1989



The overall strategy for "Get Wild," the wildlife program initiative, is to protect and improve habitat for wildlife species. Special emphasis is given to waterfowl, turkey, elk, bighorn sheep, deer, and cavity nesting species.

NFS lands are key to the survival and recovery of 32 percent of endangered or threatened species in the U.S., including the grizzly bear, woodland caribou, Puerto Rican parrot, red-cockaded woodpecker, Lahontan cutthroat trout, and gray wolf. Habitats for 171 federally listed T&E species, as well as 12 species proposed for listing, are currently being managed by the Forest Service.

Recovery efforts, in compliance with the Endangered Species Act of 1973, as amended, is done in cooperation with the Fish and Wildlife Service, individual States, other agencies, organizations, and individuals.

The challenge cost-share partnership program is designed to maintain, restore, and enhance wildlife and fish habitat on NFS lands in cooperation with conservation organizations and State and Federal agencies. During 1988 and 1989, partnership agreements were signed with cooperators representing elk, waterfowl, deer, wild turkey, bighorn sheep, quail, grouse, snag dependent species, and watchable wildlife.

Wildlife and Fisheries Administration and Resource Coordination

Objective

To minimize impacts from other resource activities to protect wildlife and fish habitat resources. To administer and manage wildlife and fish habitat management activities.

Program description

This activity includes the operations portion of the wildlife, endangered, threatened and sensitive species, inland and anadromous fish programs.

- Coordinate wildlife and fish habitat programs, goals, and plans with State and Federal agencies, fish and wildlife interest groups, and other Forest Service resource programs.
- Conduct habitat and population surveys to document current conditions and to serve as a basis for determining changes in habitat and population trends over time.
- Plan, develop, implement, and monitor habitat improvements.

Resource coordination helps minimize negative effects of other resource management actions on wildlife and fish habitats. Resource coordination is used to design projects or programs, such as timber sales, mineral developments, water improvements, and livestock grazing, that also accomplish wildlife or fish habitat improvements. An example would be a timber sale designed to also increase big game forage.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Wildlife and fisheries administration and resource coordination	$	39,786	39,925	+139
	FTE	273	273	+0

An increase of $139,000 is proposed from the 1991 base.

Wildlife and fish surveys, planning, monitoring, and coordination will be funded to enable compliance with the National Environmental Policy Act, the National Forest Management Act, and the Endangered Species Act.

As a result of recent judicial decisions, emphasis will be placed on the endangered and threatened species program. For example, the conflicts between other resource programs and such species as the red-cockaded woodpecker, spotted owl, endangered, threatened, and sensitive plants, and grizzly bear will also be addressed. Inventories to secure basic data for resource management and to design habitat enhancement projects for game and non-game species will be increased approximately $2 million over FY 1990. While anadromous fish surveys and planning will be reduced from FY 1990 levels, inland fish surveys and planning will be maintained at the FY 1990 level. Funding includes approximately $11.8 million in support to the timber management program for inventory and coordination. Monitoring responses of species and habitats to resource management plans and projects will be limited to highly visible issues in each Region.

Object class information

Travel	+21
Rent, communications, and utilities	+24
Other services	+69
Supplies, materials, and equipment	+25
Total	+139

Wildlife Habitat Improvement

Objective

To protect, maintain, and improve habitat capability for wildlife species.

Program description

The "Get Wild" wildlife habitat program emphasizes habitat enhancement projects such as:

- prescribed burning to improve forage for bighorn sheep, elk, and turkey;
- water development for quail, turkey, and waterfowl; and
- access management on existing roads to reduce habitat disturbance at critical times or to provide viewing opportunities for the public.

Many of these habitat enhancement projects will be done in cooperation with a variety of individuals, groups, and State and Federal agencies through the challenge cost-share program and other partnership efforts.

The "Get Wild" program encompasses the following emphasis areas and partners:

- Taking Wing - management and improvement of waterfowl habitat; e.g., Ducks Unlimited

- Elk Country - management and improvement of elk habitat; e.g., Rocky Mountain Elk Foundation.

- Making Tracks - management and improvement of wild turkey habitat; e.g., National Wild Turkey Federation.

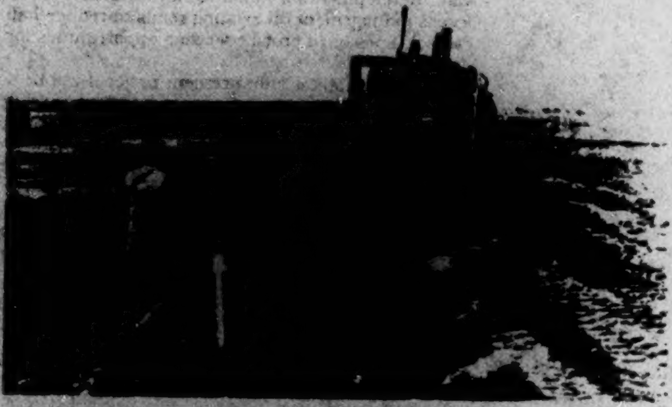
- Answer the Call - management and improvement of quail habitat; e.g., Quail Unlimited.

- Full Curl - management and improvement of bighorn sheep habitat; e.g., Rocky Mountain Bighorn Sheep Society.

- Dancers in the Forest - management and improvement of grouse and woodcock habitat; e.g., Rough Grouse Society.

- Eyes on Wildlife - provides recreational and educational information and opportunities, such as birding, wildlife and fish interpretation, and nature study; e.g., Defenders of Wildlife.

- Animal Inn - provides information and education about the value of dead standing and down trees to wildlife; e.g., timber industry and State agencies.



Ducks Unlimited engineers checking final height of dam fill on the Kadoka Lake "Taking Wing" project on the Buffalo Gap National Grassland, South Dakota. This project will provide 160 acres of waterfowl habitat.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Wildlife habitat improvement	$	11,378	14,815	+3,437
	FTE	450	498	+48

An increase of $3,437,000 is proposed from the 1991 base.

Funding at this level will improve 164,372 acres of wildlife habitat and allow completion of 6,414 improvement structures, compared to 122,000 acres and 4,734 structures in the 1991 base.

Emphasis will be on accomplishing habitat management through partnership programs such as the challenge cost-share program. Restoration and improvement will benefit 21 game species and over 100 non-game animals. Habitat improvements will support hunting and wildlife viewing on national forests and grasslands, valued at over $500 million in benefits to the public including State and local economies.

Object class information

Salaries and benefits	+2,550
Travel	+61
Transportation of things	+25
Rent, communications, and utilities	+78
Other services	+445
Supplies, materials, and equipment	+278
Total	+3,437

Inland Fish Habitat Improvement

Objective To protect, restore, and improve habitat capability for inland fish species.

Program description Program activities maintain and increase the capability of lakes and streams to sustain inland fish populations. Priority is given to projects and activities that complement Rise to the Future.

Habitat improvements include:

- installation of artificial spawning reefs and fish cover to improve lake habitats.
- construction and maintenance of reservoirs to provide and improve sport fishing opportunities.
- development of instream cover and pools to increase fish carrying capacity.
- removal of natural and man-made barriers to increase the distribution of game fish.
- streambank stabilization to increase stream habitat capability.

Fish habitat improvements in conjunction with handicap access provides fishing opportunities on the Arapaho-Roosevelt National Forest.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Inland fish habitat improvement	$	7,767	8,646	+879
	FTE	179	183	+4

An increase of $879,000 is proposed from the 1991 base.

At this funding level, 6,738 acres and 5,048 structures of inland fisheries habitat improvement will be accomplished, compared to 5,910 acres and 4,394 structures in the 1991 base.

Emphasis will be given to habitat enhancement projects that will increase habitat capability in both lakes and streams. Access to lake and stream fishing will be increased with emphasis on providing fishing for handicapped anglers.

Projects will involve working with partners through the challenge cost-share program. Emphasis will be on local fishing interest groups, State agencies, and those constituents with which the Forest Service has developed formal Memorandums of Understanding. This work will result in increased habitat capability and access and will provide additional sport fishing opportunities on the national forests. This effort will benefit not only sport fisherman but also the economies of communities and industries associated with sport fishing.

Object class information

Salaries and benefits	+199
Travel	+50
Rent, communications, and utilities	+28
Other services	+424
Supplies, materials, and equipment	+178
Total	+879

Endangered, Threatened, and Sensitive Species Habitat Improvement

Objective

To protect and improve habitat to achieve recovery goals for endangered and threatened animals and plants. To protect and sustain viable populations of sensitive animals and plants.

Program description

The Forest Service manages habitat for 171 endangered and threatened and 225 sensitive species found on NFS lands. Recovery plans provide for habitat improvements and mitigation measures essential to species recovery. In compliance with the Endangered Species Act of 1973, as amended, the Forest Service conducts inventories, plans habitat protection and improvement programs, and carries out other activities to achieve recovery objectives. The work is done in cooperation with the Fish and Wildlife Service, individual States, other agencies, organizations, and individuals.

Activities under this program include the following:

- preparation of interim management strategies until recovery plans are approved and inclusion of habitat management tasks in forest plans.

- assist the States, Fish and Wildlife Service, and other cooperators in reintroducing species, such as the peregrine falcon and bald eagle.

- manage aquatic and stream side habitat toward recovery of 39 listed fish species, including the Lahontan cutthroat trout, Gila trout, and Gila topminnow, as well as other aquatic invertebrates, such as fresh water mussels.

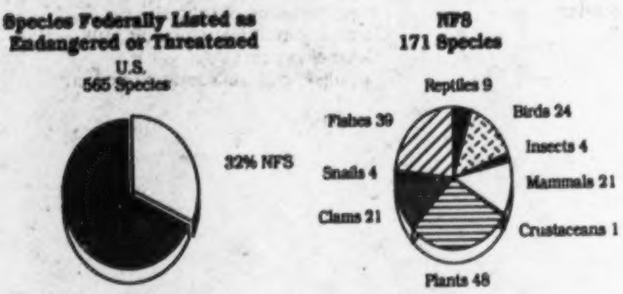
- apply habitat management techniques such as prescribed burning to maintain habitat for the Kirtland's warbler in Michigan, and silviculture practices to maintain habitat for the red-cockaded woodpecker in the Southeast.

- survey and monitor 225 sensitive species to provide management information and prevent reductions in habitat that would cause them to become federally listed as endangered or threatened.

- respond to increased public interest and new partnerships to Regional endangered, threatened, and sensitive plant species and other special interest programs.

Species Federally Listed as Endangered or Threatened

NFS 171 Species



Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Endangered, threatened, and sensitive species habitat improvement..................$	11,392	12,000	+608
FTE	268	268	0

An increase of $608,000 is proposed from the 1991 base.

Habitat improvement on 32,447 acres and 1,016 structures for endangered, threatened, and sensitive species will be completed. Activities will be concentrated on those species with approved recovery plans for which work has already begun, such as grizzly bear, red-cockaded woodpecker, Puerto Rican parrot, peregrine falcon, bold eagle, gray wolf, Kirtland's warbler, and Lahontan cutthroat trout. Habitat improvement for federally listed sensitive plants will continue at a slightly increased level.

Developing strategies and accomplishing recovery activities for species without Fish and Wildlife Service approved recovery plans will be considered a lesser priority.

Object class information

Travel	+46
Transportation of things	+11
Rent, communications, and utilities	+16
Other services	+438
Supplies, materials, and equipment	+97
Total	+608

Anadromous Fish Habitat Improvement

Objective

To protect, restore, and improve habitat capability for salmon and steelhead for commercial, sport fishing, and subsistence uses.

Program description

This program is critical to restoration of spawning and rearing habitats that were degraded by past development of other resources.

Fish production in the national forests is substantial, providing an annual harvest of fish for sport, commerce, and subsistence. For example, the national forests in California, Oregon, Idaho, and Washington provide over 50 percent of the spawning and rearing habitats for salmon and steelhead trout. In Alaska, approximately 27 percent of the freshwater habitat for salmon and steelhead trout is in the national forests.

The annual harvest of salmon and steelhead trout, spawned and reared in national forests, is over 118 million pounds. The commercial value of this harvest is estimated at $229 million. Through economically sound habitat improvements, the capability exists to increase this harvest to 190 million pounds with an estimated value of $369 million.

Projects are conducted to maintain and increase habitat capability for West Coast and Great Lakes salmon and steelhead, and Atlantic salmon in the East. Planned activities are: remove barriers to fish movement, place stream habitat improvement structures, fertilize lakes, and create spawning and rearing habitats.

The Forest Service has an opportunity to expand fishery resources to full production potential through coordination with the Northwest Power Planning Council and through other fishery restoration plans. A portion of the habitat improvement in FY 1991 will be accomplished with challenge cost-share projects.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Anadromous fish habitat improvement	$	13,960	8,866	-5,094
	FTE	229	180	-49

A decrease of $5,094,000 is proposed from the 1991 base.

Accomplishments at this funding level will total 5,734 acres and 4,307 structures for anadromous fish habitat improvement, compared to 8,775 acres and 6,592 structures in the 1991 base.

Projects designed to restore degraded habitat will receive highest priority. Opportunities to expand the distribution of anadromous fish into drainages not presently supporting these species will be considered only where there is a high benefit/cost ratio. Those projects designed to enhance non-degraded anadromous fishery habitats will be considered as a lesser priority.

Projects designed to increase habitat capability for anadromous sport species, such as steelhead trout, will be emphasized on those forests receiving high recreational fishing use. Projects benefitting commercial species will be emphasized in Alaskan forests and those forests within the Columbia River Basin where both Native American and commercial fishery demands exceed the supply.

Cooperative projects, such as with the Northwest Planning Council and Tribal Governments, will be maintained at a level comparable to FY 1990.

Object class information

Salaries and benefits	-1,913
Travel	-352
Transportation of things	-165
Rent, communications, and utilities	-302
Other services	-1,647
Supplies, materials, and equipmen	-548
Lands and structures	-167
Total	-5,094

Range Management

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Range vegetation management	**$**	26,966	30,064	29,755	31,334	33,794	+2,460
	Million AUMs	9.8	9.8	9.8	9.8	9.8	0
	FTE	578	596	596	596	607	+11
Range forage improvement	**$**	756	666	659	689	814	+125
	Thousand acres	99.4	57.0	56.2	56.2	75.0	+18.8
	FTE	20	11	11	11	11	0
Range structural improvement	**$**	1,105	1,237	1,223	1,279	1,395	+116
	Structures	2,704	1,808	1,781	1,781	3,988	+2,207
	FTE	30	22	22	22	22	0
Wild free-roaming horses and burros	**$**	181	183	181	189	220	+31
	FTE	3	3	3	3	3	0
Noxious farm weed control	**$**	1,559	1,181	1,148	1,202	2,115	+913
	Acres treated	23,861	14,838	14,634	14,634	30,870	+16,236
	FTE	10	27	27	27	27	0
Total	**$**	30,567	33,331	32,966	34,693	38,338	+3,645
	FTE	641	659	659	659	670	+11
Range Betterment Fund	$	3,946	4,700	4,643	4,643	4,578	-65
Total, All Funds	**$**	34,513	38,031	37,609	39,336	42,916	+3,580

General

Increased public interest in range condition, riparian areas, the spread of noxious weeds, forest plan implementation, competition between uses, and the need to be cost effective continue to challenge the Forest Service. The Forest Service range management program is addressing public desires for the future through a philosophy of Change On The Range.

A successful range management program enhances the success of several other programs, such as wildlife and fish management, watershed management, and recreation, due to the interrelationships of resources, activities, and program objectives. The contributions of basic range vegetation resources are important for soil productivity, water quality, watershed protection, wildlife habitat, endangered and threatened species habitat management, recreational opportunities, and open spaces.

A constituency of livestock producers, recreationists, conservationists, environmentalists, and others depends on the Forest Service to manage rangeland resources to provide forage for domestic livestock, wild horses and burros, and wildlife.

Program emphases include:

- developing coalitions among groups interested in improving public rangelands;
- improving communication between conflicting interests;
- responding to General Accounting Office findings on rangeland and riparian area conditions; and
- implementing forest plans.

Support, in the form of cost-sharing and partnership action with permittees, between Forest Service resource programs, and with other interest groups, is necessary to accomplish range management objectives.

Successful working relationships between program specialists and livestock permittees are essential for range vegetation management.

Range Vegetation Management

Objective

To manage range vegetation to protect soil and water. To provide desired plant communities and ecological diversity, improve or maintain environmental quality, and meet public needs for interrelated resource uses. To integrate range vegetation management with other resource programs to achieve forest plan multiple use objectives. To provide for livestock forage, wildlife food and habitat, outdoor recreation, and other resource needs dependent on range vegetation. To manage the program in a cost effective manner.

Program description

To provide opportunities for economic diversity and promote stability for range dependent communities. To contribute to the economic well being of the public served by national forests and grasslands. To promote cooperation and coordination among range users, public agencies, and others interested in making the most effective use of range vegetation.

Range vegetation is managed on 104 million acres or 54 percent of the National Forest System (NFS) lands in 35 states. Approximately 50 million acres are suitable for livestock grazing. The remaining lands are unsuitable due to unstable soils, steep topography, or inherently low potential for forage production. Areas unsuitable for livestock grazing often include suitable habitat for wildlife species.

Range vegetation management focuses on two broad emphases: (1) managing vegetation and soils to reach their optimum ecological potential, and (2) administering livestock grazing use through term permits and allotment management plans (AMPs) in conformance with forest plans. AMPs are being developed with special emphasis on improving undesirable riparian conditions and overstocked, declining rangelands identified in the two 1988 GAO reports.

Revenue to the U.S. Treasury from domestic livestock grazing will be about $10.5 million in FY 1991. Grazing fees were set at $1.86 per head month for the national forests in the 16 Western States for 1989, using the formula established by Presidential Executive Order in 1988. This fee is estimated to decrease to $1.81 in 1990. This value does not consider benefits to wildlife (game and nongame species), soil and water quality, watershed protection, recreation, or other multiple use benefits resulting from range vegetation management activities. In 1990, a uniform grazing fee system will be implemented on eastern national forests. Fees will be determined using comparable private grazing lease rates for noncompetitive permits and competitive bid for competitively awarded permits.

In FY 1989, there were 9,752 grazing allotments used by permittees to graze cattle, horses, sheep, and goats. Eighty-six percent of the cattle permittees have base herds of 500 cattle or less. In the western states, NFS ranges supply an average of 25 percent of the permittee's annual requirements for livestock feed.

Improved management was started on 200 allotments in FY 1989. This brings the allotment total to 72 percent under improved management. Improved management is considered "started" when prescribed actions in the AMP have been completed. These actions include improved livestock distribution, fence construction, brush control, or water development. Improved management is considered "maintained" when all actions prescribed in the AMP are carried out according to a schedule that will not permit range condition regression. Comparable figures for the past five fiscal years follow:

	Total Allotments	Allotments with Improved Management	Maintained	Allotments with Improved Management	Started
1985	10,223	7,237	71%	351	3%
1986	9,658	7,503	78%	338	3%
1987	9,610	7,335	76%	255	3%
1988	9,868	7,473	76%	195	2%
1989	9,752	7,050	72%	200	2%

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Range vegetation management.	$	31,334	33,794	+2,460
	FTE	596	607	+11

An increase of $2,460,000 is proposed from the 1991 base.

The highest priority will be given to permit administration, range allotments with riparian area conflicts, and ranges in declining condition. Other priorities include revision of existing AMPs to implement forest plans, monitoring of range condition and trend, and continued implementation of action plan items responding to the1988 GAO Reports. To accomplish priority work, reliance on partnership action in the form of cooperative projects, incentives for cost sharing by permittees and others, and integration with other programs will continue to be emphasized.

Development of AMPs will be accelerated using the additional funding for necessary on-the-ground communication and consultation between grazing permittees, interested groups and individuals, and Forest Service range personnel. Monitoring of grazing use will occur on the highest priority allotments that have a history of resource concerns. A slight decline in permitted grazing is expected as forest plans are implemented through updated AMPs; however, the speed of implementation depends heavily on the ability to update AMPs cooperatively with permittees and other interested public land users. Until AMPs for such allotments are developed, updated, or implemented, use reductions may be necessary to protect other resource values and prevent further range condition deterioration.

Efforts will be made to address the broader range vegetation management mission in implementing forest plans. These efforts include: support to wildlife, timber, and recreation; ecological diversity maintenance; and classification of vegetation by ecological status.

Object class information

Salaries and benefits	+226
Travel	+209
Transportation of things	+95
Rent, communications, and utilities	+443
Other services	+977
Supplies, materials, and equipment	+510
Total	+2,460

Range Forage and Structural Improvements

Objective

To maintain and improve soil productivity and vegetation cover on NFS lands. To provide forage for livestock, wild horses and burros, and wildlife. To minimize impacts on fragile resources such as riparian areas. To identify and measure the relevant economic effects of range improvement programs, projects, and practices.

Program description

Range improvement is any facility or treatment, constructed or installed, used to improve range vegetation or livestock management. Improvements consist of fencing and water development structures, and vegetation manipulation (plant species control) to improve forage conditions. These improvements are often designed to benefit wildlife, improve soil and water quality, and protect watersheds, while providing for sustained use by grazing animals.

The Range Betterment Fund finances a portion of the capital investments on national forests in the 16 Western States. Planning and administrative costs for these improvements are primarily paid from range management or other benefiting programs. However, the Range Betterment Fund also pays a small part of such costs.

The reported outputs and accomplishments are a combination of range management and Range Betterment Fund activities.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Range forage and structural improvement.	$	1,968	2,209	+241
	FTE	33	33	+0

An increase of $241,000 is proposed from the 1991 base.

This level provides for completing the most critical investments in structural and forage improvements in the Southern and Eastern Regions. These funds, along with the Range Betterment Fund, will be used to replace essential structural improvements in the 16 Western States, such as key fences and water developments.

This proposed program allows for completion of 3,988 structural improvements and 75,000 acres of forage improvement, compared to 1,781 structures and 56,200 acres in the 1991 base.

Object class information

Travel	+14
Rent, communications, and utilities	+6
Other services	+90
Supplies, materials, and equipment	+126
Lands and structures	+5
Total	+241

Wild Free-Roaming Horses and Burros

Objective

To protect and control wild free-roaming horses and burros on NFS lands.

Program description

The Forest Service protects, manages, and controls about 1,900 wild horses and burros on NFS lands. These activities are coordinated with the Bureau of Land Management, who also has management responsibilities for wild horses and burros.

Territory management plans provide on the ground direction for wild horse and burro management. Population levels are determined by habitat requirements and available forage. Wildlife, permitted livestock, and other range uses are also considered in setting population levels. Excess animals are removed by authorized personnel. They are adopted by qualified people, who may receive title after one year of proper care.

There were 93 excess wild free-roaming horses and burros removed from designated territories in FY 1989. Seventy-five animals are scheduled for removal during FY 1990.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Wild free-roaming horses and burros	$	189	220	+31
	FTE	3	3	+0

An increase of $31,000 is proposed from the 1991 base.

The additional funds above the FY 1991 base will be used to administer those lands transferred to USDA, Forest Service jurisdiction from the USDI, Bureau of Land Management in Nevada. A significant inventory of rangeland conditions, animal populations, and territory boundaries is planned for accomplishment.

Under the FY 1991 program, removal of 75 excess wild horses and burros will occur.

Object class information

Other services	+25
Supplies, materials, and equipment	+6
Total	+31

Noxious Farm Weed Control

Objective

To control the invasion and spread of noxious weeds on NFS lands and adjacent private lands and maintain productivity with beneficial plant cover.

Program description

Noxious weed infestations occur on 4.9 million acres of NFS lands in the western States, and these infestations continue to spread. Noxious weeds adversely affect many resource values such as wilderness, wildlife, wildlife habitat, forage quality and quantity, visual quality, reforestation, recreation opportunities, and land values.

Many States have legislation which authorizes counties and other jurisdictions to establish weed control districts covering all or part of a county. Weed control districts are concerned with control of noxious weeds within the district regardless of landownership. Treatment is effective only when control efforts are coordinated among all affected landowners. Program funding priority is to treat noxious weeds on NFS lands at the same time weed control districts treat the same species of noxious weeds on adjacent private lands. This is accomplished by close coordination with adjacent landowners and cooperating agencies with reimbursement to State, county, and local weed control authorities, as provided in the Carlson-Foley Act of 1968 (43 U.S.C. 1241-1243). The Forest Service treated 23,861 acres of NFS land during FY 1989.

In FY 1989, the Forest Service sponsored a National Noxious Weed Workshop and was thrust into a leadership role for the U.S. Department of Agriculture's noxious weed management program.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Noxious farm weed control	$	1,202	2,115	+913
	FTE	27	27	+0

An increase of $913,000 is proposed from the 1991 base.

This funding increase will basically double the program capability level. States having severe weed infestations, such as Montana and Idaho, will have funding priority, increasing the number of acres both receiving first time treatment and those receiving retreatment. Sustained treatments over several years are required to effectively manage infestation.

Increased use of biological control agents has resulted in more cost effective treatments, which are coordinated with local weed control authorities to ensure maximum effectiveness.

Accomplishment will be 30,870 acres treated, compared to 14,634 acres in the 1991 base.

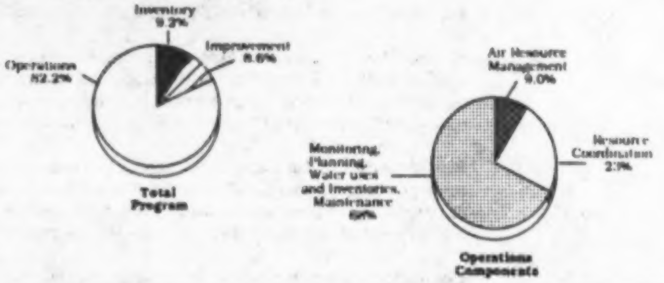
Object class information	**Travel**	**+34**
	Transportation of things	**+34**
	Rent, communications, and utilities	**+40**
	Other services	**+428**
	Supplies, materials, and equipment	**+377**
	Total	**+913**

Soil, Water, and Air Management

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Soil, water, and air operations	$	29,822	32,374	32,020	33,471	49,875	+16,404
	FTE	493	514	514	514	583	+69
Soil and water resource improvements	$	8,248	10,777	10,659	11,124	5,227	-5,897
	Acres	15,057	21,788	21,488	21,488	13,771	-7,717
	FTE	63	87	87	87	61	-26
Soil inventory	$	6,634	7,177	7,099	7,424	5,583	-1,841
	Thousand acres	6,227	7,110	7,012	7,012	6,043	-969
	FTE	124	130	130	130	110	-20
Total	$	42,704	50,328	49,778	52,019	60,685	+8,666
	FTE	680	731	731	731	754	+23
Total, Resource management, timber receipts	$	19,501	0	0	0	0	0
Total, All Funds	$	62,205	50,328	49,778	52,019	60,685	+8,666

General The maintenance and improvement of soil, water, and air resources results in direct benefits to the range, recreation, timber, wilderness, fish, and wildlife resources. Public enjoyment and use of these resources are also benefits of a well managed soil, water, and air resources program.

Soil, Water and Air Funding - FY 1991



Soil, Water, and Air Operations

Objective To use soil, water, air, and weather information to accomplish overall resource production and environmental goals.

Program description This program includes activities such as:

- Resource coordination in timber sales, mineral development, livestock grazing, and recreation development. An example is the evaluation of potential soil erosion and water quality impacts of a road construction project, and the design and application of conservation practices to avoid damage to natural resources.

- Water and air quality and soil productivity monitoring to determine whether forest plan objectives are being met and to provide a basis for more effective conservation practices.

- Maintenance of existing soil and water improvements to ensure their continued effectiveness.

- Inventory water resources and uses to provide information necessary to accomplish resource management activities and maintain and improve watershed conditions.

- Securing of water rights under appropriate State laws to ensure the availability of water needed to carry out the Agency's mission.

- Prepare emergency rehabilitation plans for lands damaged by wildfires, floods, or other natural disasters, as authorized by the Agricultural Credit Act (16 U.S.C. 2203). About 62,700 burned acres were rehabilitated in FY 1989.

- Prepare improvement plans for riparian areas and lands in declining watershed condition. In addition to the NFS appropriation, this work is also authorized by the Lake Tahoe Basin Act (P.L. 96-586) and Knutson-Vandenburg Act (K-V), as amended. About 3,350 acres were improved with K-V funds in FY 1989.

- Protect the air resource through the review of preconstruction applications for private sector development under the prevention of significant deterioration program. Inventory air quality related values associated with class I (Wilderness) designated areas.

- Provide weather data and meteorological expertise for Forest Service resource management. The Forest Service has selected a contractor to develop a weather information system to meet resource management and protection needs as well as consider the needs of cooperators.

- Cooperate with other agencies. Cooperative work includes water supply and flood forecasting; surveys of air, soil, and water quality; management of public water supplies; and collection and sharing of weather information. The Forest Service also cooperates with the Environmental Protection Agency in visibility monitoring.

- **Accomplish essential actions on Federal facility compliance projects to correct environmental pollution problems. Projects include: point and nonpoint source pollution abatement; safe drinking water systems; proper handling and disposal of asbestos; and safe storage of pesticides at Forest Service facilities.**

Managing to "secure favorable conditions of water flow" is one of the original purposes for establishment of National Forests. This photo shows a healthy riparian area with high quality water for instream benefits and downstream uses.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Soil, water, and air operations.	$	33,471	49,875	+16,404
	FTE	514	583	+69

An increase of $16,404,000 is proposed from the 1991 base.

Resource coordination and support will provide for a timber sale program of 10,564 million board feet.

Emphasis in air resource management will include the operation of 50 monitoring sites, an inventory of air quality related values, and an emission inventory on all NFS lands.

Water inventories will be conducted where investigations are necessary to identify beneficial uses of water for instream flows and to support resource management. The most critical water rights adjudication deadlines will be met. A total of $1.696 million for water inventories is proposed in 1991 compared to $687,000 in the 1991 base.

Resource coordination with other management programs will be sufficient to protect soil and water quality. Additional resource monitoring will be conducted to assure management practices protect soil, water and air values.

Fire recovery work will continue to be a priority to maintain erosion control barriers and monitor streams and soil conditions.

The highest priority projects will be accomplished to bring federal facilities in compliance with various environmental laws. This includes abatement of point and nonpoint sources of pollution, bringing water systems in compliance with health standards, and elimination of hazardous conditions to improve public safety.

Object class information

Salaries and benefits	+2,602
Travel	+1,670
Transportation of things	+608
Rent, communications, and utilities	+3,034
Other services	+5,154
Supplies, materials, and equipment	+3,336
Total	+16,404

Soil and Water Resource Improvements

Objective To protect and improve soil and water quality and enhance the productivity of the land.

Program description Soil and water improvement activities include installation of runoff and erosion control structures, reshaping of gullied land, and revegetation of denuded areas to improve watershed conditions, protect wetlands, and restore riparian areas.

These activities control erosion, reduce flood flows, and improve long term soil productivity. Water quality is also improved by reducing the movement of sediment and other pollutants into streams and lakes.

Emergency treatment of burned area following Yellowstone fires. Quick growing grass species are used to provide cover and reduce damaging runoff and erosion.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Soil and water resource improvements	$ 11,124	5,227	-5,897
FTE	87	61	-26

A decrease of $5,897,000 is proposed from the 1991 base.

This program will allow treatment of 13,771 acres to improve soil productivity and water quality. This compares to 21,488 acres in the 1991 base.

Improvements will focus on reducing soil loss, preventing flooding, and restoring declining watersheds. Projects in riparian areas that produce the greatest benefits in improved water quality and resource protection will receive highest priority. The goal of no net loss of wetlands will be met.

Soil and water program support is provided to design and prescribe measures that reduce soil loss and water pollution from other management activities.

Object class information

Salaries and benefits	-980
Travel	-163
Transportation of things	-63
Rent, communications, and utilities	-269
Other services	-2,807
Supplies, materials, and equipment	-1,428
Lands and structures	-187
Total	-5,897

Soil Inventory

Objective

To provide information concerning soil capabilities and limitations for use in resource management and planning. To accomplish stewardship responsibilities ensuring long term soil productivity.

Program description

Inventories are conducted to collect, describe, map, and interpret basic soil resource information required to manage NFS lands for multiple use and sustained yield. Inventory information includes:

- Soil productivity ratings, resource potential, and limitations.
- Extent and location of soils with erosion and stability problems.

Soil inventories are conducted at different levels of intensity. Low intensity inventories provide information for planning and broad resource allocation. All lands should be inventoried at this intensity. High intensity inventories provide information for use in areas where intensive management is planned. About one-half of the NFS lands will be included in these inventories.

Decrease for 1991

(Dollars in thousands)

		1991 Base	1991 Estimate	Decrease
Soil resource inventories	$	7,424	5,583	-1,841
	FTE	130	110	-20

A decrease of $1,841,000 is proposed from the 1991 base.

The program will provide for completion of 6,043,000 acres of soil inventories. This compares to 7,012,000 acres in the 1991 base.

The program will emphasize high intensity soil inventories needed to support timber and other resource management activities scheduled in forest plans. Work will continue on collecting interpretive data to provide soil capability ratings and identify fragile areas. Emphasis will be on inventory interpretations to maintain long term soil productivity and watershed conditions.

Object class information

Salaries and benefits	-754
Travel	-138
Transportation of things	-30
Rent, communications, and utilities	-83
Printing and reproduction	-15
Other services	-737
Supplies, materials, and equipment	-84
Total	-1,841

General Administration

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Line management	$	50,808	52,652	52,077	53,860	57,078	+3,218
	FTE	890	890	890	890	890	0
Program support	$	127,721	124,010	122,854	128,365	135,122	+6,757
	FTE	4,310	4,310	4,310	4,310	4,350	+40
Common services	$	93,589	97,353	96,088	101,250	101,250	0
Total	$	272,118	274,015	271,019 1/	283,475	293,450	+9,975
	FTE	5,200	5,200	5,200	5,200	5,240	+40

1/ Adjusted to reflect the total available after sequestration. Reprogramming will be proposed as necessary

General

General administration provides essential managerial and technical support to individuals and units involved in research and in resource management and protection. This administrative support is not readily identified with specific programs. Administrative activities supporting the National Forest System, Research, State and Private Forestry, Firefighting, Construction, and Land Acquisition appropriations are financed from the general administration budget line item.

Administrative support for all other appropriations, including transfer, permanent, and trust programs, is financed by assessments against those funds. Internal controls ensure that the ratio of assessments to these programs does not exceed the ratio of appropriated general administration to the total of the appropriations it supports.

Discussions follow on administrative activities grouped under line management, program support, and common services. These activities represent the general administration cost of accomplishing Forest Service programs.

Line Management

		1989 Final	1990 Est. with DCA Reduct.	1991 Estimate
		(Dollars in thousands)		
Washington Office	$	1,302	1,337	1,464
	FTE	16	16	16
Field Offices	$	49,506	50,740	55,614
	FTE	874	874	874
Total	$	50,808	52,077	57,078
	FTE	890	890	890

Objective

To direct, manage, and coordinate Forest Service programs to ensure they are carried out efficiently and respond to national, regional, and local needs.

Program description

Line management funds are for salaries, travel, and training of the following line management positions, including secretarial support:

- Chief, Associate Chief, Assistant Chiefs, and Deputy and Associate Deputy Chiefs of Administration and Programs and Legislation.

- Regional Foresters and Deputies for Administration or Deputy Regional Foresters in regions having only one primary deputy.

- Station Directors, Deputy Directors, and Assistant Directors for Planning and Applications and Administration.

- Area Director, State and Private Forestry.

- Forest Supervisors and Deputy Forest Supervisors.

- District Rangers.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Line management	$	53,860	57,078	+3,218
	FTE	890	890	0

An increase of $3,218,000 is proposed from the 1991 base.

This increase includes anticipated salary increases and benefits costs for all line management employees including Senior Executive Service employees. This level of funding also provides for merit pay increases for GM employees, step increases for GS employees, and employee benefits, as well as travel and training costs.

Object class information

Salaries and benefits	+2,018
Travel	+1,100
Supplies, materials, and equipment	+100
Total	+3,218

Program Support

		1989 Final	1990 Est. with DCA Reduct.	1991 Estimate
		(Dollars in thousands)		
Washington Office. . .	$	22,521	23,387	23,613
	FTE	376	376	376
Field Offices	$	105,200	99,267	111,509
	FTE	3,934	3,934	3,974
Total	$	127,721	122,654	135,122
	FTE	4,310	4,310	4,350

Objective

To provide the necessary administrative support to efficiently and effectively carry out Forest Service programs and respond to the Executive Branch and Congress on policy and budget matters.

Program description

Program support funds are for salaries, travel and training of staffs involved in program support activities. These staffs include Program Development and Budget; Resources Program and Assessment; Personnel Management and Civil Rights; Procurement and Property; Fiscal and Public Safety; Public Affairs; and other general purpose support staff.

Within several of the administrative groups, some activities can be readily identified with the benefiting program and are accordingly funded. Examples are: timber sale accounting; timber cost collection; Job Corps Centers; law enforcement; and concessionaire audits performed by fiscal and accounting management groups. Conversely, positions located in areas other than typical administrative units may not be readily identified with the benefiting program and funded by general administration. An example is a forest fire staff officer with safety and health responsibilities.

General administration funds at least one administrative assistant on all ranger districts; and one or two budget/personnel specialists and a procurement specialist on larger districts.

Many research field locations also have business management personnel funded from general administration. Where research locations are funded by a single research line item, however, business management support is charged directly to that program.

Legislative Affairs
Legislative Affairs has the primary responsibility for analyzing proposed legislation and providing information to assist the Executive Branch and the Congress while they consider the enactment of such legislation. These activities occur primarily at the Washington Office level.

In doing this, legislative affairs personnel:

- Prepare proposals for new or amended legislation as part of the Department's legislative program (10 to 15 proposals per year);

- Prepare reports stating the Department's position on proposed legislation in response to requests from congressional committees or from the Office of Management and Budget (OMB) (100 legislative reports per year);

- Prepare testimony and supporting briefing materials for Departmental witnesses in preparation for congressional hearings. Prepare followup information that committees may request (50 to 60 hearings per year);

- Track the status of pending legislation and provide information within the Forest Service and the Department (300 bills per year);

- Facilitate coordinated contacts with congressional offices and serve as a clearinghouse for congressional requests for information (25-30 requests per year);

- Provide legislative drafting services in cooperation with the Office of the General Counsel; and

- Provide training for Forest Service employees to increase their understanding of the legislative process.

Program Development and Budget
Program development and budget activities occur at all levels in the Forest Service. Budget staffs are responsible for developing, allocating, and managing annual Agency budgets which reflect specific program objectives, outputs, targets, and workforce and funding requirements.

Budget proposals reflect on the ground needs identified in forest land management plans and provide the basis for presenting and justifying Forest Service programs to USDA, OMB, and the Congress.

Once the appropriation bill is signed, work accomplishments are tracked relative to funded program objectives and output targets. At the end of the year, an evaluation of completed work and obligated dollars is prepared and presented to management. These evaluations are used as a basis for future budget development.

Tasks involved in this process are:

- Program development and analysis. Field units develop budget proposals based on annual planning direction and forest plans. Budget alternatives are developed and analyzed at each organizational level and used to develop alternative national proposals for the Forest Service.

- Budget documents and presentation. Forest Service budget proposals are negotiated with the Secretary of Agriculture and the OMB, and are incorporated into the President's annual budget. Detailed explanatory notes, witness statements, briefings, and display material are prepared to explain and justify the budget.

- Budget execution. Funds, targets, and personnel ceilings are allocated to field units. Financial needs are projected, requests are submitted for apportionments and outlay ceilings, and reprogramming requests are prepared. Emergency funding needs are handled as they occur. Close coordination is needed with agencies that transfer funds to the Forest Service to carry out Job Corps, watershed planning, flood prevention, and other such programs.

- Accountability and control. Budget personnel review field units' program planning and budget activities and conduct necessary training. Program target accomplishments are analyzed relative to plans and expenditure of funds. Results and recommendations are presented to line officers.

- Annual Report to Congress. As required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), an annual report is prepared to analyze Forest Service accomplishments and resource conditions relative to the recommended RPA Program and appropriated funding.

Resources Program and Assessment
The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) requires the Secretary of Agriculture to assess the Nation's renewable resources situation every 10 years. This Assessment projects the future demand and supply of renewable resources on all forest and rangeland in the United States. The 1989 Assessment was issued in draft form in the fall of 1988. The final assessment is expected to be available in early 1990.

The RPA also requires the Secretary to prepare a long term program every five years in response to the Assessment. The Secretary selects a recommended RPA program based on analysis of several alternatives, cost effectiveness, and public comments. Programs were sent to Congress in 1975, 1980, and 1986. The 1990 program is currently being developed based on the new assessment findings.

RPA program activities will involve the following tasks in FY 1991:

- Briefings and discussions, including data analyses, processes, drafts, and final documents will be discussed and reviewed with congressional staffs, other agencies, and national interest groups. Public participation plans will be implemented to ensure public involvement. In addition, increased emphasis will be placed on clarifying the relationships of forest planning, the RPA Program, and annual budget development.

Environmental Coordination
The Environmental Coordination program for FY 1991 will emphasize improved NEPA compliance through the nationally sponsored training program and monitoring and review of field activities. Environmental coordination activities occur at the national, regional, and forest levels to:

- Provide Agency-wide direction and leadership to implement the NEPA and coordinate environmental programs.

- Advise the Chief and other Agency managers and staff on national policies to implement NEPA, and provide technical assistance in carrying out NEPA responsibilities.

- Monitor Agency proposals and their alternatives to determine if environmental analyses focus on the most important issues, if appropriate levels of documentation are used, and if other NEPA requirements are met.

- Train Agency personnel in NEPA responsibilities and procedures, including Council on Environmental Quality (CEQ) regulations, and Forest Service policy.

- Coordinate with the Environmental Protection Agency (EPA), CEQ, and other Federal agencies on environmental matters affecting natural resources and the NFS.

- Provide leadership, technical assistance, and guidance to ensure consideration of social factors in Forest Service programs and activities. Examples include developing policies, procedures, and source materials; organizing workshops and training sessions; and evaluating results in the field.

- Evaluate and recommend changes when needed in Agency procedures for mitigating potential damage from proposed Agency actions; monitoring program and project implementation to ensure desired outcomes; addressing cumulative environmental effects such as those produced when multiple development activities occur at the same time within the same geographical area; and making resource decisions when relevant information is incomplete or uncertain.

Policy Analysis
Policy Analysis is a separate staff only at the national headquarters level, although some similar activities are carried out at regional and forest levels. The staff does in-depth analyses and examines high priority policy issues. The general approach is to collect pertinent data, do an objective analysis, and develop and evaluate alternatives for consideration by policymakers. Work assignments consist of:

- Responding to requests from USDA, OMB, and the Congress for special analyses and studies on policy issues of national and/or international concern. Examples include developing a cost accounting concept for all national forest resource activities; testing program guidelines to ensure efficient and well justified timber sales programs; and reviewing the role of the Forest Service in diversification of rural economies.

- Developing or revising Forest Service policies in response to changing conditions and public needs. Alternatives are developed to make decisions on questionable policy issues. Examples include reviewing complementary management in the Greater Yellowstone Area and analyzing the Forest Service role in providing emergency assistance and mutual aid in the urban/wildland interface.

- Evaluating Forest Service programs to determine whether they are efficiently providing public needs and benefits. Program evaluations are completed detailing economic, efficiency, and public need analyses and are used to determine needed program changes. Examples include the review of the first round of forest planning, reviewing ways of assessing the flow of national forest timber supply, and reviewing national policy and programs for pesticide technology-related research, development, and information transfer.

Personnel Management

Personnel management formulates objectives, policies, and guidelines for national, regional, and local personnel activities. This includes:

- Developing policies and guidelines for position classification, pay, merit promotion, performance evaluation, internal placement, upward mobility, cooperative education, summer and seasonal employment, and special emphasis programs such as handicapped and disadvantaged.

- Coordinating workforce planning, productivity, and automation efforts pertaining to personnel management.

- Developing policies and programs to implement incentive awards, orientation, training, and employee development programs.

- Developing and administering occupational health and safety programs.

- Advising and assisting field offices and employees in employee and labor relations activities.

- Developing or coordinating research/pilot activities to enhance service and efficiency.

Civil Rights

The Civil Rights program objective is to ensure fairness in all Forest Service activities. This includes activities such as contracting, public access, grants, education, employment, public service, data collection, and employee rights.

The Forest Service's equal employment opportunity program strives to eliminate discrimination in employment for all persons and promote equal employment opportunity through an affirmative action program.

Historically Black Colleges and Universities

The Historically Black Colleges and Universities (HBCU) Program will continue its increased emphasis on strengthening relationships with Tuskegee University, special projects at North Carolina University AT&T, the recently established research subunit at Alabama A&M University, the 1890 Summer Student Employment Program, the Black College and University Comprehensive Program, and other HBCU schools.

New activities are closely tied to the USDA 1890 Task Force's recommendations. The program will emphasize 17 action areas to foster improved understanding between the Forest Service and the 1890 Land Grant Colleges and Universities. Activities include programs designed to increase awareness of career opportunities in the Forest Service, participation of the 1890 Land Grant Colleges and Universities in Agency management activities, exchange of personnel, and the creation of partnerships in research facilities, staff information, and other areas supporting advanced forestry research.

Volunteers and Hosted Human Resource Programs

The Forest Service provides opportunities for individuals to participate in its activities through the Volunteers in the National Forests and hosted human resource employment programs. The administration of these programs is financed from general administration.

The various programs contribute greatly to the reduction of backlog in conservation work. Forest Service activities that benefit from these programs are recreation, wildlife management, emergency activities, timber stand improvement, erosion control, and other land and water conservation work.

Volunteers are of various ages and backgrounds. Adults are provided the opportunity to use their skills and talents in meaningful activities, and many young enrollees are given the opportunity to acquire their first gainful work experience.

In FY 1989, 67,356 persons participated in the Volunteers program. Volunteers contributed 2,225 person-years of work valued at $29 million.

The Forest Service serves as a host agency for cooperative programs administered primarily by State and local governments. During FY 1989, 12,329 persons participated in these cooperative programs. Participants accomplished 1,129 person-years of conservation work valued at $14.6 million.

Computer Sciences, Communications, and Information Systems Management

The primary objective of information resources management (IRM) is to provide timely and useful natural resource and administrative information to Forest Service managers and the public. Accomplishing this objective will contribute to Agency efficiency, effectiveness, and productivity.

IRM applies current and emerging information technology, concepts, and principles to efficiently support the Forest Service mission at each organization level. Specific functions are to:

- Improve the availability and accessibility of information to more effectively serve activities in national forest management, research, and State and private forestry.

- Expand Service-wide systems for distributed processing and graphics to improve communication, decisionmaking, and support for Forest Service programs.

- Provide integrated information processing capabilities throughout the Agency.

- Use the latest information technology in managing forms, reports, and records.

Procurement and Property Management

This activity provides support to Forest Service managers for acquiring, using, and disposing of a wide variety of goods and services within the framework of laws, regulations, and sound business practices. Procurement and property managers:

- Plan and direct procurement, space, and property management programs to respond to Agency needs.

- Develop directives and other guidelines to conform with Federal laws and regulations.

- Delegate procurement authority to qualified individuals.

- Manage the grants and agreements assistance programs.

- Maintain liaison with vendors, manufacturers, and trade associations to stay abreast of new technology and market developments.

- Establish and adjust rental rates for about 5,000 housing units, including trailer space facilities, each year in accordance with 5 U.S.C. 5911.

Fiscal and Public Safety
This activity is concerned with developing guidelines and operating integrated finance and accounting systems and subsystems consistent with the requirements of the General Accounting Office (GAO), OMB, Department of the Treasury, and Office of the Secretary of Agriculture. Specific functions are providing guidance, oversight, and direction for:

- Financial control systems with emphasis on fund accountability, receipt collections, voucher auditing, and disbursements.

- Computing, scheduling, and payment through electronic transfers nearly $300 million annually to States and counties consistent with laws and regulations.

- Cash and debt management activities.

- Investigations and claims for and against the Government.

- Washington Office and regional coordination of Service-wide law enforcement activities which protect the public, Forest Service employees, natural resources, and federal property on NFS lands.

- Coordination and assurance of timely followup action on management reviews and Office of the Inspector General (OIG) and GAO audits; improving management controls to prevent waste, loss, and misuse; meeting requirements of the Federal Managers Financial Integrity Act and OMB Circular A-123; and providing Service-wide coordination for Title VI of the Civil Rights Act.

Management Planning and Analysis
This activity includes management analysis, evaluation of work force composition, and primary staff support for major management improvement initiatives. Management planning and analysis personnel:

- Administer the national pilot study, a major productivity improvement effort at the field and national levels. It also covers administration of the Washington Office pilot project.

- Identify and evaluate new management techniques for a changing workplace and workforce.

- Assess the social dimensions of natural resource management policy.

Public Information and Involvement

Public information and involvement activities are designed to ensure that a knowledgeable public has an opportunity to participate in Agency policy development and resource management decisions. These include informing the public of the programs and projects taking place in the NFS, the results of Agency forest research, and the cooperative programs with State and private forestry landowners. Public involvement processes are designed so citizens can have a voice in shaping all the major policies and actions proposed by the Forest Service. Information dissemination and public participation in carrying out the Forest Service mission have been prescribed in legislative authorities and directives.

The Forest Service celebrates its heritage in FY 1991 commemorating the establishment of the first Forest Reserves under the Forest Reserve Act of 1891. This act marked a major change in the land disposition policy of the Federal Government, and brought to fruition the idea of management of the natural resources for "the greatest good of the greatest number in the long run." The original Forest Reserves have now grown into the 191-million-acre National Forest System.

The celebration will be a cooperative effort among all units of the Forest Service and interested nongovernmental groups, including the Buffalo Bill Historical Center and the American Forestry Association. Activities will include a traveling exposition describing the origin and significance of the NFS, a rededication ceremony of the first Forest Reserve, two major symposia looking backward to the start and forward to the future of the NFS, and regional and local open houses, displays, and public involvement events.

The centennial events will be a unique way to involve the public in Forest Service activities, and to provide information about the NFS. The events will provide a means to raise the awareness of the public regarding Forest Service policies and show the public that the Agency practices "caring for the land and serving people." It will offer opportunities for citizens to become involved.

A major emphasis of the Agency will continue to be its public participation program. This program encourages public understanding of the uses and values of the nation's precious natural resources and participation in the management planning and decision process. More importantly, it helps the Forest Service broaden the information upon which its resource management decisions are made. It enables the Agency to be aware of, and responsive to, the public it serves, to ensure that the needs and concerns of the people regarding the management of their land are understood.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Program support	$	128,365	135,122	+6,757
	FTE	4,310	4,350	+40

An increase of $6,757,000 is proposed from the base.

This funding level includes increases in salary and benefit costs, including merit pay increases. Also included in this level of funding are costs to cover 40 additional positions which are necessary to meet increased workloads and to properly reflect charges.

This funding level also includes general inflation, an increase in positions attributed to General Administration as a result of reviews and audits to assure correct charging for work performed, and administration of the Consent Decree.

Costs for the Historically Black Colleges and University program are also expected to increase slightly.

Object class information

Salaries and benefits	+6,556
Travel	+201
Total	+6,757

Common Services

	1989 Final	1990 Est. with DCA Reduct.	1991 Estimate
	(Dollars in thousands)		
Rents, Communications, and utilities	$ 41,000	41,981	44,300
Contractual services....	$ 13,787	14,258	14,900
Equipment and supplies.	$ 16,400	16,931	17,900
National Finance Center.	$ 21,200	21,880	22,800
Other USDA Services ...	$ 1,200	1,238	1,350
Total, Common Services..........	$ 93,587	96,288	101,250

Objective

To finance those nonpersonal services that support the general administration organization or that otherwise meet the definition of general administration in that they cannot be identified with a specific program.

Program description

Rent and Utilities
These are space rentals and utilities for facilities owned or leased by the Forest Service. General administration is responsible for that portion occupied or used by general administration personnel and equipment. Total space owned or leased by the Forest Service is approximately 23 million square feet. An additional estimated three million square feet is covered by the standard level user charge for which payment is made to the General Services Administration (GSA). General administration pays only for the space occupied by those individuals and groups who are financed by the General Administration line item.

Communications
Communication services funded in common services include the transmission of messages and data from place to place, e.g., contractual charges for radio and wireless telegraph service, telephone and telegraph services, switchboard charges, telephone installation costs, and rental of teletype equipment.

Postage and mail are included in the communications category. Forest Service policy is to classify mail at the lowest rate possible consistent with the mailer's need; and to manage mail to provide the most effective, economical, and reliable service. Payment for postage and mail is based on the exact amount recorded by metered mail systems.

Contractual Services
This includes obligations for budget object class 25 (other services) except those that are otherwise specifically identified, such as the National Finance Center. Included are publication of notices, tuition, operation of facilities or other service contracts, storage of household goods, office equipment repair, maintenance contracts, and automated data processing (ADP) on-line retrieval services, other services, and supplies.

Equipment and Supplies
Most general office supplies are charged to general administration because they cannot be readily identified with the user at the time they are ordered.

National Finance Center
The USDA service center provides payment and accounting services for agencies of the Department. The Forest Service obtains such services as complete administrative payment processing; payroll computation; payment and related reports; and required accounting records and financial reports. Using the revolving fund financing principle, the center establishes use rates to recover costs based on the volume of documents processed for each agency. The budget for the center is included and justified in the Rural Development, Agriculture and Related Agencies Appropriation Act.

Other USDA Services
This covers the miscellaneous services provided to the Forest Service by the Department. Examples are growth capital, design center, printing plant, and the contract automation system. The costs are distributed to the agencies based on the volume of business generated by each agency.

No change for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Common Services . . .	$ 101,250	101,250	0

No change is anticipated for FY 1991.

NATIONAL FOREST SYSTEM

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-1106-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Land and resource protection	646.326	244.845	241.967
	2. Renewable resource management and utilization	643.913	665.374	[illegible]
	3. General administration	272.116	271.019	[illegible]
	Total direct program	1.562.355	1.181.238	1.211.543
	Reimbursable program	214.931	51.503	52.608
10.00	**Total obligations**	1.777.286	1.232.741	1.264.151
	Financing:			
	Offsetting collections from:			
11.00	**Federal funds**	-198.701	-34.043	-40.300
13.00	**Trust funds**	-16.230	-17.460	-12.308
21.40	**Unobligated balance available, start of year**	-38.584	-41.722	0
22.40	**Unobligated balance transferred, net**	0	-2.850	0
24.40	**Unobligated balance available, end of year**	41.722	0	0
25.00	**Unobligated balance lapsing**	28.629	0	0
39.00	**Budget authority**	1.594.122	1.136.666	1.211.543
	Budget authority:			
40.00	**Appropriation**	1.585.405	1.149.232	1.211.543
40.00	**Reduction pursuant to P.L. 99-177**		-12.566	
41.00	**Transferred to other accounts**	-400	0	0
43.00	**Appropriation (adjusted)**	1.585.005	1.136.666	1.211.543
50 00	**Reappropriation**	9.117	0	0
	Relation of obligations to outlays:			
71.00	**Obligations incurred, net**	1.562.355	1.181.238	1.211.543
72.40	**Obligated balance, start of year**	299.509	255.949	241.108
74.40	**Obligated balance, end of year**	-255.949	-241.108	-254.205
90.00	**Outlays**	1.605.915	1.196.079	1.198.146

NATIONAL FOREST SYSTEM

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-1106-0-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	499,416	467,188	478,526
11.3	Other than full-time permanent	97,524	91,143	93,352
11.5	Other personnel compensation	78,378	73,475	75,262
11.8	Special personal services payments	26,149	26,855	28,527
11.9	Total personnel compensation	701,467	658,661	675,667
	Personnel benefits:			
12.1	Civilian	125,759	130,050	133,186
13.0	Benefits for former personnel	13,209	12,357	12,657
21.0	Travel and transportation of persons	64,622	33,485	33,965
22.0	Transportation of things	22,284	11,547	11,712
23.1	Rental payments to GSA	23,694	17,496	17,179
23.2	Rental payments to others	16,119	8,351	8,471
23.3	Communications, utilities, and miscellaneous charges	56,848	29,457	29,879
24.0	Printing and reproduction	5,251	2,721	2,760
25.0	Other services	378,400	196,039	203,847
26.0	Supplies and materials	96,502	50,004	50,718
31.0	Equipment	43,502	22,541	22,864
32.0	Land and structures	9,906	5,133	5,207
41.0	Grants, subsidies, and contributions	27	14	14
42.0	Insurance claims and indemnities	2,552	1,322	1,341
44.0	Refunds	215	111	113
99.0	Subtotal, direct obligations	1,560,357	1,179,289	1,209,580
99.0	Reimbursable obligations	214,931	51,503	52,608
	ALLOCATION TO THE DEPARTMENT OF THE INTERIOR			
99.0	Subtotal obligations, allocation accounts	1,998	1,949	1,963
99.9	Total obligations	1,777,286	1,232,741	1,264,151

NATIONAL FOREST SYSTEM

PERSONNEL SUMMARY

Identification code: 12-1106-0-1-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	17,260	14,383	14,407
Total compensable workyears:			
Full-time equivalent employment	23,175	21,183	20,979
Full-time equivalent of overtime and holiday hours	4,059	2,760	2,731
Average ES salary	$75,500	$78,200	$97,800
Average GS grade	9.53	9.53	9.53
Average GS salary	$27,168	$27,902	$28,859
Average salary of ungraded positions	$26,458	$27,172	$28,105
Reimbursable:			
Total number of full-time permanent positions	214	173	171
Total compensable workyears:			
Full-time equivalent employment	288	234	231
Full-time equivalent of overtime and holiday hours	81	74	73
Average GS grade	9.31	9.31	9.31
Average GS salary	$25,468	$26,156	$27,053
Allocation Accounts:			
Total number of full-time permanent positions	41	37	37
Total compensable workyears:			
Full-time equivalent employment	61	56	55
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	9.79	9.79	9.79
Average GS salary	$29,382	$30,175	$31,211

Forest Service

Firefighting

		1989 Final 1/	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
		(Dollars in thousands)					
Fire presuppression	$	(158,707)	169,234	167,358	175,061	170,867	-4,194
Fuels management	$	(7,909)	8,905	8,837	9,265	8,322	-943
Acres treated		(293,649)	322,000	317,000	317,000	318,200	+1,200
Subtotal, Fire management and presuppression	$	(166,616)	178,139	176,188	184,326	179,189	-5,137
FTE		(3,000)	3,879	3,879	3,879	3,860	-19
Fighting forest fires 2/	$	(375,000)	383,000	378,812	137,079	118,669	-18,410
Total	$	(541,616)	561,139	555,064	321,405	297,858	-23,547

1/ FY 1989 was funded under the National Forest System. The amounts are shown here for comparison purposes only.
2/ Emergency operations.

Appropriation Summary Statement

This is a new appropriation established by Congress in P.L. 101-121, Interior and Related Agencies Appropriation Act for FY 1990. It provides funds for Forest Service fire suppression on National Forest System (NFS), Department of the Interior, and adjacent lands. Forest fire protection and emergency forest fire rehabilitation of NFS lands is also included. In prior years, these activities were included in the NFS appropriation.

Fire Management and Presuppression

General

The fire protection program protects life, property, and natural resources on the 191 million acres of National Forest System (NFS) lands. An additional 20 million acres of adjacent State and private lands are also protected through fee or reciprocal protection agreements.

This program is a responsive and cost effective program of wildfire presuppression and fuels management activity, commensurate with the threat to life and property, public values, and management objectives. Within the overall program, there are two components; fire presuppression and fuels management.

The total cost of firefighting on NFS lands is the sum of presuppression and suppression expenditures, plus the net resource value change (NRVC); i.e., damage less benefits, as a result of wildfires. See the subsequent section on suppression activities.

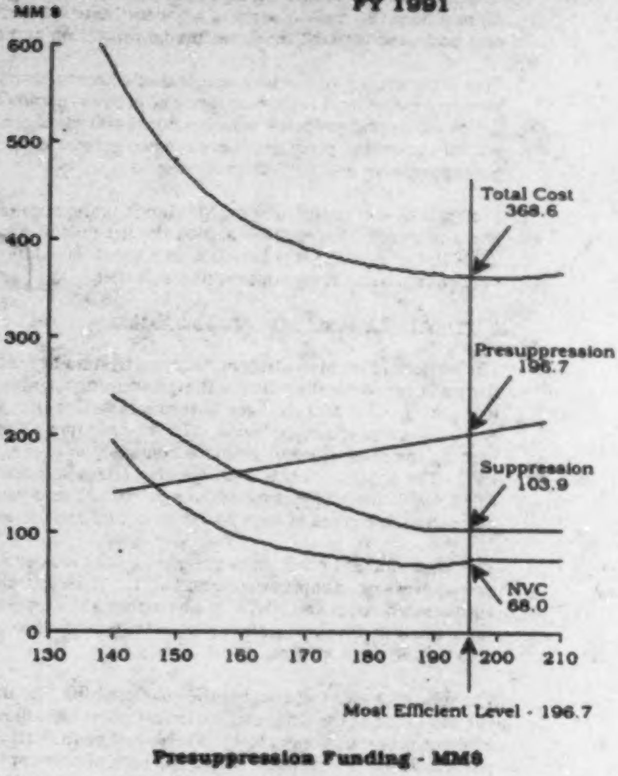
National Fire Management Analysis System

The National Fire Management Analysis System is used to identify the most economically efficient fire protection program. It exhibits firefighting costs and changes in resource values that are likely to occur at various funding levels. The analysis can also be used to identify the most efficient program composition at any given funding level. The analysis is based on historical data and economic efficiency. In FY 1985, the analysis model was calculated and validated against more than five years of data based on actual experience.

The most efficient program is specified by the lowest sum of presuppression, suppression, and NRVC. The estimates for expected suppression costs and NRVC in alternative presuppression budgets are considered in developing the proposed fire protection program under a constrained total budget.

The following chart illustrates the relationship. The upper curve is the total cost of the program; its lowest point identifies the most efficient program budget level. The lowest cash outlay, the most efficient level, is that point where the sum of presuppression plus suppression is minimized. Net resource losses are not included in the cash outlay formula. All data are in FY 1991 constant dollars.

Forest Service Firefighting Program Budget Relationships - MM$ FY 1991



The analysis system estimates the expected annual average suppression and NRVC for a given presuppression budget based on that budget being held constant over a period of about 10 years. Since the actual severity of the fire seasons vary, the suppression and NRVC experienced in a particular year are generally higher or lower than the predicted average. The most efficient presuppression budget identified by the analysis is one that will result in the lowest program cost over time.

Presuppression

Objective

To protect National Forest System (NFS) lands from damage by wildfires.

Program description

The fire presuppression program provides the capability to prevent forest fires and take prompt, effective initial suppression action on wildfires. The appropriate action is taken to meet land and resource management objectives.

Prior to fire ignition, presuppression funding covers salaries and expenses associated with planning, information and education, pre-incident training, equipment purchase and replacement for caches, and patrols.

A hotshot crew builds a fire line in advance of major fire activity on the Santa Fe National Forest.

Once a fire has started, presuppression funding continues through discovery, mobilization, and establishment of the base level suppression organization which includes base salaries of the regular, pre-planned Forest Service firefighting organization.

Subsequent fire suppression activity is discussed in the Emergency Operations section.

The Forest Service also assists other Federal agencies and States through training programs, planning assistance, sharing joint use equipment contracts, and by operating interagency fire coordination centers.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Fire presuppression	$	175,061	170,867	-4,194
	FTE	3,579	3,560	-19

A decrease of $4,194,000 is proposed from the 1991 base.

Protection emphasis will focus on higher benefit-cost ratio activities. These activities include initial attack forces, selected deployment, rapid mobilization of nationally shared forces, increased interagency coordination, and early detection of the most potentially damaging fire starts, limiting fire size, and reducing resource losses.

This level provides protection at 90.3 percent of the most efficient program of $196,728,000.

Object class information

Salaries and benefits	-380
Travel	-150
Transportation of things	-46
Rent, communications, and utilities	-318
Other services	-2,285
Supplies, materials, and equipment	-1,015
Total	-4,194

Fuels Management

Objective

To minimize the potential for large, destructive wildfires by efficiently reducing the volume of hazardous fuels.

Program description

This program includes support and planning for fuels activities; inventory of fuel hazards; analysis of alternatives for treating the hazards; and treatment. Treatment includes: yarding and stockpiling woody materials for increased utilization; hand or mechanical manipulating of fuels to a less flammable and obstructing condition; and removal or prescribed burning of hazardous material.

The major benefit is improved protection of natural resources. Other benefits include increased use of woody material for fiber and heat, improved recreation opportunity (for example, public access and visual resource improvement through opening viewpoints), increased grazing opportunities, improved wildlife habitat, increased water yields, and improved sites for reforestation.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Fuels management	$	9,265	8,322	-943
	FTE	300	300	0

A decrease of $943,000 is proposed from the 1991 base.

This program level will permit completion of high priority, cost effective, fuel treatment projects. The FY 1991 program will allow treatment of 318,200 acres, compared to 317,000 acres in the 1991 base.

Object class information

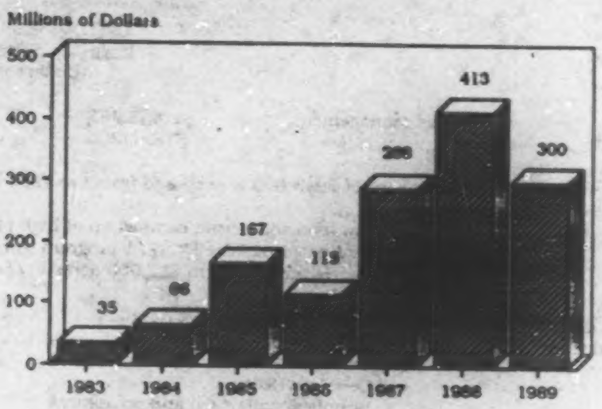
Travel	-97
Transportation of things	-9
Rent, communications, and utilities	-69
Other services	-512
Supplies, materials, and equipment	-256
Total	-943

Emergency Operations

Objective To efficiently suppress wildland fires on or threatening NFS lands. To immediately and efficiently rehabilitate burned over NFS lands to prevent further destruction of natural resources.

Program description This program provides for the direct expenses to suppress wildfires on or threatening NFS lands and for the rehabilitation of burned over NFS lands. Suppression funds are also used on Department of the Interior lands covered by interdepartmental agreements.

It also may be used in preparation for fire presuppression when above average forecast and actual burning conditions exceed a nationally determined acceptable level of risk. These funds are used only to the extent necessary under emergency conditions.



Emergency Fire Suppression Costs
National Forest System Protected Lands

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Emergency suppression and rehabilitation	$	137,070	118,660	-18,410
	FTE	0	0	0

A decrease of $18,410,000 is proposed from the 1991 base.

The $118,660,000 program represents the estimated emergency fire and rehabilitation of burned over lands for the Forest Service in FY 1991. This estimate is generated by the National Fire Management Analysis System, based on the FY 1991 budget for fire protection. Actual suppression costs will depend on the level of fire protection, intensity, and duration of fire activity.

Object class information

Other services	-18,410
Total	-18,410

FIREFIGHTING

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-1111-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Fire management and presuppression	0	176,192	179,189
	2. Emergency operations	0	378,812	118,660
	Total direct program	0	555,004	297,849
	Reimbursable program	0	15,560	14,893
10.00	Total obligations	0	570,564	312,742
	Financing:			
	Offsetting collections from:			
11.00	Federal funds	0	-15,560	-14,893
39.00	Budget authority	0	555,004	297,849
	Budget authority:			
40.00	Appropriation	0	561,139	297,849
40.00	Reduction pursuant to P.L. 99-177	0	-6,135	0
43.00	Appropriation (adjusted)	0	555,004	297,849
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	0	555,004	297,849
72.40	Obligated balance, start of year	0	0	73,831
74.40	Obligated balance, end of year	0	-73,831	-77,753
90.00	Outlays	0	481,173	293,927

FIREFIGHTING

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-1111-0-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	0	82,266	74,249
11.3	Other than full-time permanent	0	26,445	21,315
11.5	Other personnel compensation	0	72,030	27,728
11.8	Special personal services payments	0	27,654	9,310
11.9	Total personnel compensation	0	208,395	132,602
	Personnel benefits:			
12.1	Civilian	0	28,285	24,988
13.0	Benefits for former personnel	0	5,069	3,600
21.0	Travel and transportation of persons	0	23,241	10,546
22.0	Transportation of things	0	8,087	3,380
23.1	Rental payments to GSA	0	1,247	1,297
23.2	Rental payments to others	0	2,316	1,943
23.3	Communications, utilities, and miscellaneous charges	0 0	5,177	4,762
24.0	Printing and reproduction	0	7,659	2,611
25.0	Other services	0	208,992	86,497
26.0	Supplies and materials	0	46,764	18,576
31.0	Equipment	0	7,594	6,224
32.0	Land and structures	0	183	149
41.0	Grants, subsidies, and contributions	0	6	3
42.0	Insurance claims and indemnities	0	1,850	589
44.0	Refunds	0	119	82
99.0	Subtotal, direct obligations	0	555,004	297,849
99.0	Reimbursable obligations	0	15,560	14,893
99.9	Total obligations	0	570,564	312,742

PERSONNEL SUMMARY

Direct:			
Total number of full-time permanent positions	0	2,877	2,853
Total compensable workyears:			
Full-time equivalent employment	0	3,850	3,831
Full-time equivalent of overtime and holiday hours	0	945	936
Average GS grade	0	9.57	9.57
Average GS salary	$0	$28,594	$29,606
Average salary of ungraded positions	$0	$0	$0
Reimbursable:			
Total number of full-time permanent positions	0	22	22
Total compensable workyears:			
Full-time equivalent employment	0	29	29
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	0	5.46	5.46
Average GS salary	$0	$18,045	$19,696

Forest Service

Construction

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)				
Construction of facilities	$	85,814	38,000	38,000	0	25,794	-12,206	+25,794
Operation and maintenance recreation facilities	$	0	0	0	0	7,533	+7,533	+7,533
	FTE	251	267	267	0	181	-86	+181
Forest road construction	$	178,687	163,723	163,723	0	181,000	+17,277	+181,000
	Miles 1/	885.0	654.0	654.0	0	972.0	+318.0	+972.0
	FTE	2,810	2,303	2,303	0	2,394	+91	+2,394
Trail construction	$	18,347	18,611	18,611	0	15,480	-3,131	+15,480
Resource management, timber receipts	$	3,800	0	0	0	0	0	0
	Miles	1,284.0	1,122.0	1,122.0	0	1,301.5	+179.5	+1,301.5
	FTE	300	320	320	0	280	-40	+280
Construction of roads by timber purchasers (PCF)	$	(112,700)	(112,000)	(112,000)	0	(116,249)	(+4,249)	(+116,249)
	Miles 2/	4,879.0	6,158.0	6,158.0	0	5,726.0	-432	+5,726.0
Total, Construction	$	325,618	221,000	221,000	0	222,906	+906	+222,906
	FTE	2,949	2,827	2,827	0	2,785	-42	+2,785
Other funds								
Resource management, timber receipts	$	3,800	0	0	0	0	0	0
Operation and maintenance recreation facilities	$	0	0	0	0	7,533	+7,533	+7,533
Total, All Funds	$	329,418	221,000	221,000	0	230,439	+9,439	+230,439

1/ Includes 34.8 miles accomplished with carry-over funds from FY 1989.
2/ Includes miles accomplished under the Purchaser Election Program.
( ) Indicates non-add amounts.

Appropriation Summary Statement

The Construction appropriation provides for acquisition, restoration, construction, and improvement of buildings, utility systems, dams, recreation facilities, roads, bridges, trails, and other physical facilities. Land acquisition for administrative sites may be funded from this appropriation when it is a part of the total project cost.

Other appropriations and funds are used to finance minor construction and reconstruction projects when the total estimated cost is less than $100,000, except where specified in Exhibits 1 through 3. The Act of June 4, 1897, Organic Administration Act of 1897, as amended (16 U.S.C. 473).

Authorities

Construction for administration, protection and management.
Such sums as appropriated; no expiration date.

P.L. 81-478, Granger-Thye Act of April 24, 1950 (16 U.S.C. 571c). Section 1.
Erect buildings, lookout towers, and other structures on non-Federal land where a long term right-of-use is secured.
Such sums as needed; no expiration date.

P.L. 88-657, Act of October 13, 1964, National Forest Roads and Trail Systems Act (16 U.S.C. 532-538). P.L. 94-588, National Forest Management Act of 1976 (16 U.S.C. 472a). P.L. 93-378 Forest and Rangeland Renewable Resources Planning Act, as amended (16 U.S.C. 1601). Section 4 (2). (23 U.S.C. 101 and 205)
Acquisition, construction and maintenance of Forest Roads and Trails.
Such sums as appropriated; no expiration date.

P.L. 89-106, The Act of August 4, 1965 (7 U.S.C. 2250a). Section 1.
Erection and leasing of buildings, structures, and land from non-Federal sources.
Such sums as appropriated; no expiration date.

P.L. 90-543, National Trails System Act, October 2, 1968, as amended by P.L. 98-11 (16 U.S.C. 1241-1251). Sections 7 and 10.
Land acquisition, exchange, donation. Management and assistance of the National Trails System.
Such sums as appropriated; no expiration date.

P.L. 95-307, Forest and Rangeland Renewable Resources Research Act, June 30, 1978, as amended (16 U.S.C. 1643(a)). Section 3.
Construction of Research laboratories and facilities.
Such sums as appropriated; no expiration date.

P.L. 95-495, Act of October 21, 1978 (92 Stat. 1649). Sections 18(e).
Establishes the Boundary Waters Canoe Area Wilderness and Boundary Waters Canoe Area Mining Protection Area. For dispersed recreation and trail construction.
Such sums as necessary.

P.L. 95-619, National Energy Conservation Policy Act, November 9, 1978 (42 U.S.C. 8259). Section 549.
Retrofit of facilities for energy conservation.
Such sums as appropriated; expires January 1, 1990.

P.L. 96-581, Act of December 23, 1980, Section (b)(2).
Acquisition and construction of administrative facilities in Arizona.

Construction of Facilities

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base (Dollars in thousands)	1991 Estimate	Inc. (+) or Dec. (-) from Base
Research construction	$	1,540	4,408	4,408	0	1,501	+1,501
		1	3	3	0	2	+2
Construction for fire, administrative, and other purposes	$	8,331	6,727	6,727	0	11,732	+11,732
	FTE	38	34	34	0	34	+34
Recreation construction	$	24,043	27,856	27,856	0	12,551	+12,551
	FTE	162	208	208	0	145	+145
Total	$	33,914	38,991	38,991	0	25,784	+25,784
	FTE	201	245	245	0	181	+181
Operation and maintenance of recreation facilities	$	0	0	0	0	7,553	+7,553
Total, All Funds	$	33,914	38,991	38,991	0	33,337	+33,337

General

This program consists of the construction, replacement, and improvement of buildings and related facilities to support forest research, State and private forestry, and National Forest System (NFS) programs. The program also includes portable structures (trailers and modular units) that become an integral part of an administrative site.

Research Construction

Objective

To build and improve laboratories and other facilities needed to carry out the Forest Service research mission.

Program Description

Forest Service scientists develop new knowledge and technology to improve productivity of the Nation's forests and rangelands.

Scientists need facilities and equipment that are adequate, safe, and commensurate with the type of research being performed. Adequate facilities and equipment are necessary to achieve high productivity.

The complexity of research problems continues to increase. Forest Service laboratories and equipment are not keeping pace with the sophisticated experiments needed to explore and solve current problems and concerns.

Facilities are located to permit Federal scientists to interact with university scientists and ensure a comprehensive, coordinated approach to problems.

Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Research construction. . . . . . $	0	1,501	+1,501
FTE	0	2	+2

An increase of $1,501,000 is proposed from the 1991 base.

The FY 1991 program will continue to emphasize health and safety projects, including construction of safe chemical and flammable storage, installation of fire exits, renovation of sewage and water systems, and elimination of other health and safety hazards. No facility construction projects to accommodate new areas of research, to accomplish needed facility repairs, or to provide adequate office, laboratory, workshop, and storage space for ongoing research are included in the FY 1991 proposal.

The proposed research construction projects are shown in Exhibit 1.

Object class information

Salaries and benefits.	+80
Travel.	+20
Transportation of things	+10
Rent, communications, and utilities. . .	+15
Other services	+500
Supplies, materials, and equipment. . .	+50
Lands and structures.	+826
Total	+1,501

Exhibit I

FY 1991
PROJECT LISTING
RESEARCH CONSTRUCTION

Health and Safety.
The following projects include removal of asbestos building materials, installation of fire detection and alarm systems, replacement of unsafe electrical wiring, and the elimination of other health and safety hazards.

Station			
Location	State	Project description	Cost (Dollars in thousands)
Pacific Northwest		Total	54
Bend	OR	Restore wiring in shop	
Olympia	WA	Modernize fire control equipment in lab	
Corvallis	OR	Install ground fault interrupters in greenhouse	
Pacific Southwest		Total	120
San Dimas Exp. Forest	CA	Replace telephone system	
Placerville	CA	Septic tank upgrade	
Riverside	CA	Electrical and mechanical safety improvements	
Intermountain		Total	77
Missoula	MT	Reroof central section of lab	
Provo	UT	Safety fence for hazardous materials	
Boise	ID	Remove unsafe structure	
Logan	UT	Replace laboratory roof	
Rocky Mountain		Total	29
Flagstaff	AZ	Install emergency fire exit on 2nd floor	
Fraser Exp. Forest	CO	Rewire wooden garage	
Fort Collins	CO	Install additional electrical panels; upgrade/rehabilitation hood fans	
North Central		Total	124
All Station locations	MN, WI, MI IL, MO	Complete stationwide environmental compliance survey; develop policies and procedures for dealing with results	
All Station locations	MN, WI, MI IL, MO	Stationwide asbestos surveys	
St. Paul	MN	Reroof station headquarters	

Exhibit 1 (Continued)

FY 1991
PROJECT LISTING
RESEARCH CONSTRUCTION

Station			
Location	State	Project description	Cost (Dollars in thousands)
Northeast		Total	343
All Station locations	PA,OH,WV KY,MA,VT NH,CT,NY ME	Upgrade electrical systems at numerous field locations	
Delaware	OH	Transformer replacement	
Princeton	WV	New waterlines	
Burlington	VT	Replace flooring	
Southeast		Total	149
Macon	GA	Reroof buildings, including shop/headhouse; install elevator for building handicapped access; upgrade restrooms	
Olustee	FL	Reroof center section of lab	
Southern		Total	150
Gulfport	MS	Retrofit HVAC system; replace heating boiler	
Stoneville	MS	Replace laboratory floor	
Starkville	MS	Retrofit HVAC system	
Forest Products Laboratory		Total	455
Madison	WI	Repair leaking roofs on pilot plant and duration of load buildings; install smoke barriers and fire suppression systems to meet code; construct hazardous material storage facility	
		Subtotal	1,501

Exhibit 1 (Continued)

FY 1991
PROJECT LISTING
RESEARCH CONSTRUCTION

Construction of Facilities

The following projects include repair, remodeling, completion, and construction of offices, laboratories, workshops, and storage facilities needed to carry out the Forest Service research mission.

Station			
Location	State	Project description	Cost (Dollars in thousands)
No construction projects are proposed for FY 1991.			
		Subtotal	0
		National Total	1,501

Construction for Fire, Administrative, and Other Purposes (FA&O)

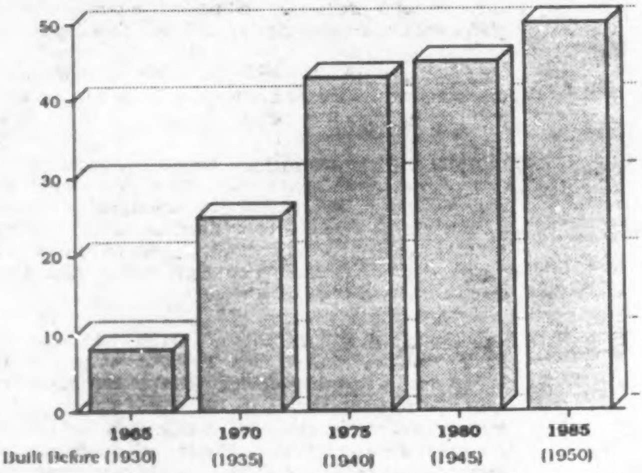
Objective

To replace, construct, and improve offices; employee housing; service and storage buildings; nursery buildings; airports; heliports; and water, waste, electrical, and similar utility systems for fire and general administrative purposes. To acquire and improve administrative sites and other construction projects (except recreation and research facilities) in support of Fire, National Forest System (NFS), and State and private forestry programs.

Program Description

The FY 1991 program will emphasize facility planning, replacement, and rehabilitation. About 46 percent of the 15,000 buildings and utility systems owned and operated by the Forest Service were built before 1940. About 50 percent exceeded their structural and functional design life in 1985, and continued use is no longer cost effective because these facilities need extensive maintenance.

Percent of FA&O Buildings Exceeding 35 Years * Age



*Average Design Life

Facility Planning

- Master planning. Master planning ensures coordination at the forest level to manage and evaluate existing facilities, eliminate obsolete facilities that are no longer cost effective, and consolidate for more effective operation and control.

- Planning and design. Advance facilities planning and preliminary designs for projects that could be constructed within the next three years to support implementation of forest plans.

Replacement and Rehabilitation

- Health and safety. Health and safety is emphasized in the construction program. Safe and healthy working conditions and living environments must be provided for employees and users of Forest Service facilities. Needed actions include meeting drinking water and waste water disposal standards, providing facilities for proper use and storage of hazardous chemicals and flammables, replacing unsafe electrical wiring, and eliminating or mitigating other health and safety hazards.

- Program support facilities. Furnish working and living space and achieve resource production and protection targets through replacement and construction of facilities. This support includes:

1. Fire management. Provide lookouts, air attack facilities, fire management centers, and other facilities to support fire suppression and presuppression activities.

2. Nursery and tree improvement building construction. Construct, replace, and enlarge nursery and tree improvement buildings required to meet tree seedling production levels for the 1990s. This includes greenhouses, headhouses, storage buildings, offices, packing sheds, etc., and integral support systems of those buildings (sewer, electrical, and water systems), including underground irrigation systems.

3. Administrative facilities. Provide service and storage facilities, offices, employee housing, and related administrative site improvements to meet program needs. Many administrative sites are located in remote, sparsely populated areas where leasable facilities are scarce or nonexistent and are difficult for the private sector to provide at a reasonable cost. Under such noncompetitive conditions, Forest Service ownership of facilities has been shown to yield a significant positive rate of return on the initial construction investment and to have lower life cycle costs. Housing construction and replacement will be limited to providing family housing in isolated locations and seasonal housing in areas where recruitment of seasonal employees is hampered by lack of affordable private housing. Family housing will not be constructed in locations where such housing can be rented or purchased by the employee in the private sector at a reasonable cost. Efforts to replace older facilities where maintenance is uneconomical will continue.

4. Equal opportunity support. Provide facilities that will further the equal opportunity goals in the Forest Service's affirmative action plan. Retrofit present facilities to provide access for persons with disabilities and equal facilities for women and men.

5. Energy conservation. Retrofit existing facilities to improve their energy efficiency as required by the National Energy Conservation Policy Act, P.L. 95-629.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Fire, administrative, and other construction.	$	0	11,732	+11,732
	FTE	0	34	+34

An increase of $11,732,000 is proposed from the 1991 base.

At this funding level, replacement of unsafe or functionally obsolete facilities will receive primary consideration. In addition, a minimum level of new construction of the most critical high priority projects will be done. Planning for future programs will continue.

FA&O projects included in the FY 1991 program are listed on the following pages as Exhibit 2.

Object class information

Salaries and benefits.	+1,282
Travel.	+246
Transportation of things	+100
Rent, communications, and utilities. . .	+636
Other services	+5,545
Supplies, materials, and equipment. . .	+770
Lands and structures.	+3,153
Total	+11,732

Exhibit 2

FY 1991
PROJECT LISTING
Construction for Fire, Administrative, and Other Purposes

State	National Forest	Project	Cost of Facilities	Cost of Roads
			(Dollars in thousands)	
Region 1--Northern Region				
	Regionwide	Planning and design	231	
MT	Aerial Fire Depot	Taxi & ramp overlay paving	187	0
ID	Panhandle	Avery office	181	0
MT	Lolo	Seeley Lake CQ and fim storage	425	0
ID	Clearwater	Canyon MF housing, Phase 1	440	0
		Region 1 Total	1,464	0
Region 2--Rocky Mountain Region				
	Regionwide	Planning and design	309	
CO	Arapaho-Roosevelt	Clear Creek office addition	418	37
CO	Arapaho-Roosevelt	Boulder office & work center-Stage I	180	30
SD	Black Hills	Pactola office	355	50
SD	Black Hills	Custer shop warehouse	280	0
		Region 2 Total	1,542	117
Region 3--Southwest Region				
	Regionwide	Planning and design	216	
AZ	Tonto	Tonto Basin office	228	0
AZ	Prescott	Prescott Aviation Base--Phase II	1,384	0
		Region 3 Total	1,828	0
Region 4--Intermountain Region				
	Regionwide	Planning and design	123	
ID	Boise	Lowman District complex stage	305	100
UT	Wasatch-Cache	Forest Supervisors office; SL District office - Stage II	200	0
ID	Targhee	Island Park office expansion	215	0
UT	Dixie	Escalante Admin. Site	155	0
		Region 4 Total	998	100

FY 1991
PROJECT LISTING
Construction for Fire, Administrative, and Other Purposes

State	National Forest	Project	Cost of Facilities	 Roads
			(Dollars in thousands)	
Region 5--Pacific Southwest Region				
	Regionwide	Planning and design	287	
CA	Sierra	Fresno Air Attack Base	1,660	100
		Region 5 Total	1,947	100
Region 6-- Pacific Northwest Region				
	Regionwide	Planning and design	267	
WA	Colville	Sullivan Lake office	550	50
OR	Umpqua	Toketee housing	560	0
OR	Umatilla	Ukiah residence	180	0
		Region 6 Total	1,557	50
Region 8--Southern Region				
	Regionwide	Planning and design	262	
KY	Daniel Boone	Morehead RD office	575	0
		Region 8 Total	837	0
Region 9--Eastern Region				
	Regionwide	Planning and design	184	
WI	Nicolet	Florence RD-Phase II	183	50
WI	Chequamegon	Supervisor's office and Park Falls R. D. Admin. Site	415	51
MN	Superior	LaCroix Admin. Site	510	45
		Region 9 Total	1,292	146
Region 10--Alaska Region				
	Regionwide	Planning and design	267	0
		Region 10 Total	267	0
		National Total	11,732	513

Recreation Construction

Objective

To provide a spectrum of quality outdoor recreation opportunities with facilities appropriate to customer expectations and the forest setting. To repair and rehabilitate existing recreation facilities, meet health and safety standards, protect soil and water resources, improve economic efficiency, and sustain or increase fee receipts. To construct new facilities to meet public recreation needs.

Program Description

The recreation program emphasizes leisure and sport activities in a variety of settings. Recreation facilities are constructed or reconstructed to:

- provide quality sites and facilities to meet modern public demand;
- provide interpretation of forest resources and public benefits from the national forests;
- protect the health and safety of forest visitors;
- qualify certain facilities for user fee collection;
- reduce the backlog of deferred maintenance;
- decrease maintenance costs;
- preserve past capital investments; and
- maintain soil and water quality.

The Land and Water Conservation Fund (L&WCF) Act of 1965, as amended, (16 U.S.C. 460l) establishes standards which must be met before fees may be charged for the use of recreation facilities. Recreation facility reconstruction and replacement ensures that facilities where fees are charged will continue to meet these standards and thereby remain in the fee system.

Over $500 million was invested in national forest recreation facilities in the 1960s. Some of these facilities have worn out, become obsolete, or are inefficient and ineffective. Many of these facilities are approaching, or have reached, the end of their designed life and must be eliminated if they are not reconstructed or replaced. Major needs include restoring and modernizing the physical setting and replacing water, sanitation, and utility systems.

Recreation construction and reconstruction is part of the recreation challenge cost-share program. The Forest Service and partners cooperate by jointly providing cash supplies, equipment, and/or labor to revitalize existing facilities and to develop new ones.

Forest
Service

Land Acquisition

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)				
Acquisition management .... $	4,600	6,054	6,054	6,332	6,107	+53	-225
FTE	94	101	101	101	97	-4	-4
Land purchase .... $	59,605	57,379	57,379	0	57,379	0	+57,379
Total, L&WCF .... $	64,205	63,433	63,433	6,332	63,486	+53	+57,154
Acres acquired	107,257	74,200	74,200	0	85,000	+10,800	+85,000
FTE	94	101	101	101	97	-4	-4

Appropriation Summary Statement

The Land and Water Conservation Fund Act of September 3, 1964, (78 Stat. 897, as amended; 16 U.S.C. 4601-4 to 4601-11) provides funding for the acquisition of recreation lands and interests. The acquisitions are made under authorities of various acts and provide for high priority outdoor recreation opportunities and conservation needs within the National Forests.

Proposed legislation in FY 1991 would establish the America the Beautiful Appropriation. Funds would be transferred from the Land and Water Conservation Fund to the new appropriation. The FY 1991 proposed legislation would provide $88,869,000 for acquisition of approximately 92,000 acres under the L&WCF. The FY 1991 program is discussed under the new appropriation America the Beautiful. If this new legislation is not passed, we propose $63,486,000 for land acquisition in FY 1991.

Authorities

P.L. 61-435, Weeks Act, March 1, 1911, as amended by P.L. 94-588 (16 U.S.C. 516, 521b). Sections 1 and 2.
Land acquisition for watershed protection and timber production.

P.L. 88-577, Wilderness Act, September 3, 1964. Sections 5 and 6.
Land acquisition, exchange, donation.
Such sums as appropriated; no expiration date.

P.L. 90-542, Wild and Scenic Rivers Act, October 2, 1968. Sections 6 and 16.
Land acquisition, exchange, donation.
Such sums as appropriated; no expiration date.

P.L. 90-543, National Trails System Act, October 2, 1968, as amended by P.L. 98-11 (16 U.S.C. 1241-1251). Sections 7 and 10.
Land acquisition, exchange, donation. Management and assistance of the National Trails System.
Such sums as appropriated; no expiration date.

P.L. 93-205, Endangered Species Act, December 28, 1973. Sections 2 and 3.
Protection of threatened and endangered species.

P.L. 93-622, Eastern Wilderness Act, January 3, 1975. Sections 6 and 9.
Land acquisition, exchange, donation.
Such sums as appropriated; no expiration date.

P.L. 95-442, Act of October 10, 1978 (7 U.S.C. 2269).
Donations of land or interests in land.

P.L. 95-495, Act of October 21, 1978 (92 Stat. 1649). Section 7(d)(3).
Establishes the Boundary Waters Canoe Area Wilderness and Boundary Waters Canoe Area Mining Protection Area. For acquisition of lands and waters within the designated wilderness.
Section 7(d)(3)—such sums as necessary.

P.L. 96-586, Lake Tahoe Basin Act, December 23, 1980. Sections 2 and 3.
Land acquisition.
Such sums as appropriated; no expiration date.

P.L. 99-663, Columbia River Gorge National Scenic Area Act, November 17, 1986. Section 16a.
Land acquisition.
$40,000,000; no expiration date.

Additional authorities are provided in each of the acts establishing National Recreation Areas and Wildernesses and in other specific laws.

Land and Water Conservation Program

Acquisition Management

Objective

To administer the land acquisition program

Program description

Acquisition management includes the cost of planning and processing acquisition cases, including those exchanges that would otherwise qualify for purchase using Land and Water Conservation Fund money.

Decrease for 1991

		1990 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Acquisition management..........	$	6,332	6,107	-225
	FTE	101	97	-4

A decrease of $225,000 is proposed from the 1991 base.

This level of funding will provide administrative funds for a land acquisition program of $57,379,000. It will also provide administration funds for the closing of existing land acquisition cases, including those exchanges that would qualify for purchase using Land and Water Conservation Fund money.

Proposed legislation in FY 1991 would establish the America the Beautiful Appropriation. The FY 1991 proposed legislation would provide for $6,754,000 for acquisition management under the L&WCF. The FY 1991 program would be transferred to the new appropriation, America the Beautiful. The FY 1991 program is discussed under the new appropriation America the Beautiful. If this new legislation is not passed, we propose $6,107,000 for acquisition management.

Object class information

Other services........................	-225
Total..................................	-225

Land Purchase

Objective

To acquire lands, waters, and related interests within the National Forest System for recreation, wilderness, wildlife habitat management, endangered species protection, and other important public outdoor recreation purposes.

Program description

Since the Land and Water Conservation Fund program began in 1965, nearly 1.4 million acres needed for outdoor recreation within the National Forest System have been acquired. These lands were acquired for approximately $716 million, or about $500 per acre. Over the past 5 years, approximately 327,000 acres have been acquired at a cost of $223 million, for an average cost of $680 per acre.

Land purchase funds are used for payment of the cost of purchased lands. They are also used for cash equalization payments for those exchanges that would otherwise qualify for purchase using Land and

Increase for 1991

	1990 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Land purchase	$0	57,379	+57,379

An increase of $57,379,000 is proposed from the 1991 base.

This level of funding would be used to acquire approximately 85,000 acres needed for the protection of critical wildlife habitat, cultural and historical values, congressionally designated areas, and other outdoor recreation and conservation purposes.

Proposed legislation in FY 1991 would establish the America the Beautiful Appropriation. The FY 1991 proposed legislation would provide for $82,115,000 for land purchase under the L&WCF. The FY 1991 program would be transferred to the new appropriation, America the Beautiful. The FY 1991 program is discussed under the new appropriation America the Beautiful. If this new legislation is not passed, we propose $57,379,000 for land purchase.

Object class information

Land and structures	+57,379
Total	+57,379

LAND ACQUISITION

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5004-0-2-303	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Land acquisition	66,664	96,102	63,086
	2. Columbia River Gorge	400	0	400
	Total direct program	67,064	96,102	63,486
	Reimbursable program	11	0	0
10.00	Total obligations	67,075	96,102	63,486
	Financing:			
	Offsetting collections from:			
14.00	Non-Federal sources	-11	0	0
21.40	Unobligated balance available, start of year	-35,528	-32,669	0
24.40	Unobligated balance available, end of year	32,669	0	0
40.00	Budget authority	64,205	63,433	63,486
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	67,064	96,102	63,486
72.40	Obligated balance, start of year	5,538	17,225	22,444
74.40	Obligated balance, end of year	-17,225	-22,444	-22,455
90.00	Outlays	55,377	90,883	63,475

SUMMARY OF BUDGET AUTHORITY and OUTLAYS
(in thousands of dollars)

Enacted/requested:			
Budget authority	64,205	63,433	63,486
Outlays	55,377	90,883	63,475
Proposed for later transmittal under proposed legislation:			
Budget authority	0	0	-63,486
Outlays	0	0	-63,475
Total:			
Budget authority	64,205	63,433	0
Outlays	55,377	90,883	0

LAND ACQUISITION

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-5004-0-2-303	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	2,811	3,102	3,165
11.3	Other than full-time permanent	104	115	117
11.5	Other personnel compensation	43	48	55
11.9	Total personnel compensation	2,958	3,265	3,337
	Personnel benefits:			
12.1	Civilian	480	507	672
13.0	Benefits for former personnel	2	2	2
21.0	Travel and transportation of persons	225	326	210
22.0	Transportation of things	30	44	28
23.1	Rental payments to GSA	77	60	59
23.2	Rental payments to others	63	91	59
23.3	Communications, utilities, and miscellaneous charges	160	149	96
24.0	Printing and reproduction	7	10	6
25.0	Other services	1,522	2,206	1,423
26.0	Supplies and materials	102	148	95
31.0	Equipment	84	135	87
32.0	Land and structures	61,386	89,080	57,410
42.0	Insurance claims and indemnities	3	4	1
44.0	Refunds	2	3	1
99.0	Subtotal, direct obligations	67,064	96,102	63,486
99.0	Reimbursable obligations	11	0	0
99.9	Total obligations	67,075	96,102	63,486

PERSONNEL SUMMARY

	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	70	75	72
Total compensable workyears:			
Full-time equivalent employment	94	101	97
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	$75,500	$78,200	$97,800
Average GS grade	11.46	11.46	11.46
Average GS salary	$32,296	$33,168	$34,306
Average salary of ungraded positions	$28,659	$29,433	$30,443

LAND ACQUISITION

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5004-2-2-303	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Land acquisition	0	0	-63,086
	2. Columbia River Gorge	0	0	-400
10.00	Total obligations	0	0	-63,486
	Financing:			
40.00	Budget authority	0	0	-63,486
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	0	0	-63,486
74.40	Obligated balance, end of year	0	0	11
90.00	Outlays	0	0	-63,475

OBJECT CLASSIFICATION (in thousands of dollars)

	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	0	0	-3,165
11.3	Other than full-time permanent	0	0	-117
11.5	Other personnel compensation	0	0	-55
11.9	Total personnel compensation	0	0	-3,337
	Personnel benefits:			
12.1	Civilian	0	0	-672
13.0	Benefits for former personnel	0	0	-2
21.0	Travel and transportation of persons	0	0	-210
22.0	Transportation of things			-28
23.1	Rental payments to GSA	0	0	-59
23.2	Rental payments to others	0	0	-59
23.3	Communications, utilities, and miscellaneous charges	0	0	-96
24.0	Printing and reproduction	0	0	-6
25.0	Other services	0	0	-1,423
26.0	Supplies and materials	0	0	-95
31.0	Equipment	0	0	-87
32.0	Land and structures	0	0	-57,410
42.0	Insurance claims and indemnities	0	0	-1
44.0	Refunds	0	0	-1
99.9	Total obligations	0	0	-63,486

LAND ACQUISITION

PERSONNEL SUMMARY

Identification code: 12-5004-2-2-303	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	0	0	-72
Total compensable workyears:			
Full-time equivalent employment	0	0	-97
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES grade	0	0	$97,800
Average GS grade	0	0	11.46
Average GS salary	$0	$0	$34,306
Average salary of ungraded positions	$0	$0	$30,443

Forest Service

America The Beautiful

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
	(Dollars in thousands)						
Land Acquisition 1/							
Acquisition management ....$	(4,600)	(6,054)	(6,054)	0	6,754	+700	+6,754
FTE	(94)	(101)	(101)	0	97	-4	+97
Land purchase ....$	(59,605)	(57,379)	(57,379)	0	82,115	+24,736	+82,115
FTE	(0)	(0)	(0)	0	0	0	0
Total, L&WCF ....$	(64,205)	(63,433)	(63,433)	0	88,869	+25,436	+88,869
Acres acquired	(107,287)	(74,200)	(74,200)	0	92,000	+17,800	+92,000
FTE	(94)	(101)	(101)	0	97	-4	+97
Tree Planting Initiative							
Community volunteers ....$	0	0	0	0	65,000	+65,000	+65,000
FTE	0	0	0	0	47	+47	+47
Rural cost-share ....$	0	0	0	0	110,000	+110,000	+110,000
FTE	0	0	0	0	30	+30	+30
Total, Tree planting initiative ....$	0	0	0	0	175,000	+175,000	+175,000
FTE	0	0	0	0	77	+77	+77
Total, America the Beautiful ....$	(64,205)	(63,433)	(63,433)	0	263,869	+200,436	+263,869
FTE	(94)	(101)	(101)	0	174	+73	+174

1/ Financed in Land Acquisition appropriation in FY 1989 and FY 1990.

General

The President is proposing a major new environmental initiative, called America the Beautiful. America the Beautiful will provide an environmental legacy for future generations, will enhance existing natural and recreational resources, and will address mounting concerns about the buildup of atmospheric carbon dioxide. It includes a major nationwide tree planting program and a substantial expansion in land acquisition.

Tree Planting Initiative

The $175 million tree planting program will enhance the beauty of America - the beauty of this Nation's cities, towns, and rural areas. It will enrich the lives of all Americans by improving the environment and enhancing the beauty of our Nation.

Sixty five million dollars will be directed toward a community volunteer program that involves corporate and civic voluntary efforts. The goal is to plant 30 million trees annually in the Nation's nearly 40,000 cities, towns, and communities.

The rural portion of the program ($110 million) will provide funds to cost-share tree planting and forest improvement with private landowners and funds for strengthening the technical assistance and infrastructure needed to work with landowners and assure environmentally-adapted planting stock is available.

Planting trees will also help demonstrate America's commitment to address worldwide concerns about deforestation and global climate change, by providing a positive example of action in the United States.

Land Acquisition

The America the Beautiful initiative also provides for acquiring lands to enhance the recreation and conservation objectives of the National Forest System. The initiative includes [illegible] million for land acquisition. Priorities are based on a criteria system developed by the Department of Agriculture and the Interior. The criteria recognize the benefits of locating opportunities near population centers, and focus on resources providing a range of recreation opportunities and protect biologically significant ecosystems elements of the natural conservation systems, and threatened and endangered species habitat.

Land Acquisition

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)				
Land Acquisition 1/							
Acquisition management 0	(4,000)	(6,054)	(6,054)	0	6,754	+700	+6,754
FTE	(94)	(101)	(101)	0	97	-4	+97
Land purchases 0	(90,309)	(67,379)	(67,379)	0	92,115	+24,736	+92,115
Total, L&WCF 0	(94,309)	(73,433)	(73,433)	0	98,869	+25,436	+98,869
Acres acquired	(107,287)	(74,200)	(74,200)	0	92,000	+17,800	+92,000
FTE	(94)	(101)	(101)	0	97	-4	+97

1/ Financed in Land Acquisition appropriation in FY 1989 and FY 1990.

Appropriation Summary Statement

The Land and Water Conservation Fund Act of September 3, 1964, (78 Stat. 897, as amended; 16 U.S.C. 460l-4 to 460l-11) provides funding for the acquisition and conservation of lands and interests for recreation and conservation purposes. The acquisitions are made under authorities of various acts and provide for high priority outdoor recreation and conservation opportunities within the national forests. Authorities are listed under the Land Acquisition appropriation.

Land and Water Conservation Fund

Acquisition Management

Objective To administer the land acquisition program.

Program description Acquisition management includes the cost of planning and processing acquisition cases, including those exchanges that would otherwise qualify for purchase using Land and Water Conservation Fund money.

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Acquisition management.......$	0	6,754	+6,754
FTE	0	97	+97

An increase of $6,754,000 is proposed from the 1991 base.

This level of funding will provide administration funds for a land acquisition program of $88,869,000. It will also provide administration funds for the closing of existing land acquisition cases, including those exchanges that would qualify for purchase using Land and Water Conservation Fund money.

If this new legislation is not passed, we propose $6,107,000 for acquisition management. The current law FY 1991 program is discussed under Land Acquisition.

Object class information

Salaries and benefits	+4,009
Travel	+210
Transportation of things	+28
Rent, Communications, and utilities	+214
Printing and reproduction	+6
Other services	+2,105
Supplies, materials, and equipment	+182
Total	+6,754

Land Purchase

Objective

To acquire lands, waters, and related interests within the National Forest System for recreation, wilderness, wildlife habitat management, endangered species protection, and other important conservation purposes.

Program description

Since the Land and Water Conservation Fund program began in 1965, nearly 1.4 million acres needed for outdoor recreation and conservation within the National Forest System have been acquired. These lands were acquired for approximately $716 million, or about $500 per acre. Over the past 5 years, approximately 327,000 acres have been acquired at a cost of $223 million, for an average cost of $680 per acre.

Land purchase funds are used for payment of the cost of purchased lands. They are also used for cash equalization payments for those exchanges that would otherwise qualify for purchase using Land and Water Conservation Fund money.

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Land purchase. . . . $	0	82,115	+82,115
FTE	0	0	0

An increase of $82,115,000 is proposed from the 1991 base.

This level of funding would be used to acquire approximately 92,000 acres needed for the protection of critical wildlife habitat, cultural and historic values, congressionally designated areas, and other outdoor recreation and conservation purposes.

If this new legislation is not passed, we propose $57,379,000 for land purchase. The current law FY 1991 program is discussed under Land Acquisition.

Object class information

Lands and structures.	+82,115
Total.	+82,115

Tree Planting Initiative

	1990 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)			
Tree planting initiative							
Community volunteers ....$	0	0	0	0	65,000	+65,000	+65,000
FTE	0	0	0	0	47	+47	+47
Rural cost-share ....$	0	0	0	0	110,000	+110,000	+110,000
FTE	0	0	0	0	30	+30	+30
Total, Tree planting initiative ....$	0	0	0	0	175,000	+175,000	+175,000
FTE	0	0	0	0	77	+77	+77

Objective

The President's 1991 Budget includes $175 million for tree planting and forestry improvement. As part of the President's "America the Beautiful" campaign, this initiative will:

- Offset increases in U.S. carbon dioxide emissions.

- Demonstrate U.S. commitment to worldwide forest management and address global climate change concerns.

- Provide leadership to support conservation in the U.S. through public-private partnerships and volunteer approaches to tree planting and forest management.

- Improve forest management and provide multiple environmental and economic benefits.

The goal of these efforts will be to plant, improve, and maintain nearly one billion trees per year.

Community Volunteers

Objective

To establish a public-private sector partnership, based on an expansion of the existing USDA Forest Service urban and community forestry program and delivery system, to promote a nationwide volunteer effort to plant an average of 30 million trees annually in communities.

Program Description

Trees are a significant factor in the quality of life of America's communities. Trees provide environmental, social, and economic benefits. They enhance biodiversity, wildlife, air and water quality, improve landscape aesthetics and property values. They are especially effective "natural air cleaners" in communities. Not only do they remove carbon dioxide from the atmosphere and release oxygen, but also reduce demands for heating and cooling of buildings through careful placement for shade or as windbreaks.

Although trees in communities have important demonstrated values, recent studies indicate that rapid deforestation is occurring in America's communities. In many cities and towns, on average only one tree is being planted for every four that die or are removed. The Community Volunteers proposed program would reverse that trend through a Federal-State-local partnership approach to strengthen technical assistance available to communities and citizens and mobilize volunteers to plant trees.

National leadership for the volunteer effort will be directed to increase awareness; promote contributions of funds and labor; and mobilize individuals, businesses, and organizations to support the planting effort. The funds generated by these efforts would be used to underwrite the costs of site preparation, tree selection, planting and maintenance on publicly-owned sites in cities and towns throughout the country.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Community volunteers.	$	0	65,000	+65,000
	FTE	0	47	+47

This increase provides $65 million for an all-out community trees volunteer program that relies heavily on corporate and civic voluntary contributions of both labor and funding to underwrite costs of tree planting and care in communities, with a goal of planting an average of 30 million trees annually in the nearly 40,000 cities, towns, and communities in the United States. Funds are included to encourage tree planting and to foster volunteer efforts in our Nation's communities. The Federal program would concentrate on developing the infrastructure of technical expertise at the Federal, State, and local levels to coordinate volunteer efforts, supporting the Commission, and developing informational, technical, and promotional materials to promote and support tree planting efforts.

Object class information	Salaries and benefits	+2,300
	Travel	+1,927
	Transportation of things	+485
	Rent, communications, and utilities	+592
	Printing and reproduction	+13,960
	Other services	+22,667
	Supplies, materials, and equipment	+624
	Grants, subsidies, and contributions	+22,445
	Total	+65,000

Rural Cost Share

Objective

To support tree planting and forest improvement on rural lands.

Program description

Tree planting and forest improvement will produce significant environmental benefits-improved air quality, increased water quality, and reduced soil erosion. They will also result in improved wildlife habitat, and enhanced opportunities for outdoor recreation. Much of the tree planting will take place on economically marginal and environmentally sensitive agricultural cropland and pastureland.

Many rural communities are economically depressed. Increased tree planting will significantly expand employment opportunities for private tree planting vendors and forestry consultants who will carry out the prescriptions for timber stand improvement activities.

Increased tree planting will also benefit those rural areas with timber processing industries. The additional tree planting will help keep timber prices stable and will enhance future supplies of wood. The net benefit will be adequate supplies of wood products for consumers at reasonable prices.

Technical assistance to landowners will be carried out using the existing Forest Service/State Forester delivery system for forestry incentive programs. The President's Tree Initiative will be national in scope with tree planting or forest improvement occurring in virtually every State of the Nation.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Rural cost-share.	$	0	110,000	+110,000
	FTE	0	30	+30

This activity includes $110 million to support tree planting and forest improvement on rural lands, through a strengthened Federal cost-sharing and technical assistance approach. The funds provide a Federal pool of cost-share dollars for assisting landowners in purchasing and establishing trees and improving existing forest stands, and cover costs of technical assistance in support of administering cost-share funds.

Because the scope of the tree planting will embrace many areas that have not had recent significant tree planting efforts (e.g., such as States that did not strongly participate in Conservation Reserve Program or forestry incentive program tree plantings, etc.), the funds will also bolster the infrastructure of technical support, expertise, and supply of environmentally-adapted planting stock to ensure appropriate assistance is available to landowners nationwide to assure planting success.

Object class informatin

Salaries and benefits	+1,500
Travel	+545
Transportation of things	+264
Rent, communications, and utilities	+145
Printing and Reproduction	+4,704
Other Services	+7,195
Supplies, materials, and equipment	+123
Grants, subsidies, and contributions	+95,524
Total	+110,000

AMERICA THE BEAUTIFUL

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-1112-2-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct program:			
	1. Land acquisition	0	0	88,869
	2. Tree planting initiative	0	0	175,000
10.00	Total obligations	0	0	263,869
	Financing:			
39.00	Budget authority	0	0	263,869
	Budget authority:			
40.00	Appropriation (general fund)	0	0	175,000
40.00	Appropriation (special fund)	0	0	88,869
43.00	Appropriation (adjusted)	0	0	263,869
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	0	0	263,869
74.40	Obligated balance, end of year	0	0	-65,967
90.00	Outlays	0	0	197,902

AMERICA THE BEAUTIFUL

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-1112-2-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	0	0	6.024
11.3	Other than full-time permanent	0	0	455
11.5	Other personnel compensation	0	0	188
11.9	Total personnel compensation	0	0	6.667
	Personnel benefits:			
12.1	Civilian	0	0	1.164
13.0	Benefits for former personnel	0	0	46
21.0	Travel and transportation of persons	0	0	2.134
22.0	Transportation of things	0	0	687
23.1	Rental payments to GSA	0	0	332
23.2	Rental payments to others	0	0	147
23.3	Communications, utilities, and miscellaneous charges	0	0	391
24.0	Printing and reproduction	0	0	16.005
25.0	Other services	0	0	26.878
26.0	Supplies and materials	0	0	348
31.0	Equipment	0	0	378
32.0	Land and structures	0	0	82.869
41.0	Grants, subsidies, and contributions	0	0	125.818
42.0	Insurance claims and indemnities	0	0	5
99.9	Total obligations	0	0	263.869

PERSONNEL SUMMARY

Direct:			
Total number of full-time permanent positions	0	0	153
Total compensable workyears:			
Full-time equivalent employment	0	0	174
Full-time equivalent of overtime and holiday hours	0	0	9
Average ES salary	$0	$0	$97.800
Average GS grade	0	0	12.53
Average GS salary	$0	$0	$39.372
Average salary of ungraded positions	$0	$0	$0

Forest Service

Acquisition of Lands for National Forests, Special Acts

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
	(Dollars in thousands)						
Acquisition of Lands for national forests, special acts .... $	966	1,068	1,054	1,054	1,103	+49	+49
Acres acquired	5,723	550	550	550	550	0	0
FTE	1	1	1	1	1	0	0

Appropriation Summary Statement

The Congress has enacted several special laws that authorize appropriations from receipts of specified national forests for the purchase of lands to minimize erosion and flood damage.

Certain critical watersheds need soil stabilization and vegetative cover restoration to reduce serious erosion resulting from damaging floods within the national forests. Land treatment measures must be applied and subsequently maintained on all lands in these critical watersheds to make corrective action fully effective.

To ensure full program effectiveness, the Federal government acquires the intermingled private lands. Results are reflected in improved watershed conditions.

The governments of the designated counties in Utah, Nevada, and Southern California recognize the benefits from these acquisition programs and are interested in having these critical watersheds protected through public ownership.

Land acquisition costs reflect long term savings when compared to expenditures of public funds for rehabilitation and public safety in flood damaged areas.

Authorities

P.L. 76-589, 76-591, and 78-310 (54 Stat. 297 and 299 and 58 Stat. 227).
Land acquisition for watershed protection and timber production.
Toiyabe-$10,000 annual limit.
Other such sums as available from the receipts of each National Forest or as appropriated; no expiration date.

Objective

To acquire lands within critical watershed needing soul stabilization and restoration of vegetation , to prevent serious erosion and resulting damage by flood

Program description

Lands are acquired from willing sellers and are managed to stabilize the soils and restore vegetative cover to reduce serious erosion from damaging floods. Funds may also be used for cash equalization in land exchanges involving acquisition of these lands. In the past 3 years, 6,418 acres have been acquired at a cost of $1,764,427.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Acquisition of lands for national forests, Special Acts	$	1,054	1,103	+49
	FTE	1	1	0

An increase of $49,000 is proposed from the 1991 base.

This funding level will provide for the acquisition of 550 acres.

Objective class information

Land and structures	+49
Total	+49

Forest
Service

Acquisition of Lands to Complete Land Exchanges

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)				
Acquisition of Lands to complete land exchanges .... $	325	1,070	1,065	1,065	1,106	+40	+40
Acres acquired	37	713	713	713	713	0	0

Appropriation Summary Statement

The Act of December 4, 1967 (16 U.S.C. 484a), as amended, stipulates that deposits made by public school districts, public school authorities, or State or local governments for cash equalization of certain land exchanges can be appropriated to acquire replacement lands for National Forest System (NFS) purposes in the same State.

Authorities

P.L. 90-171, Act of December 4, 1967, Land Exchanges in the National Forests, as amended (16 U.S.C. 484a).

Acquisition of lands to complete land exchange with public schools and State and local governments.

Such sums as appropriated; no expiration date.

Objective

To acquire lands suitable for NFS purposes, in order to replace NFS lands acquired by public school districts, public school authorities, or State or local governments.

Program Description

When it is in the public interest, public schools and State or local governments can acquire NFS lands by making a cash equalization payment up to 100 percent of the value of the Federal land when the State, local, or school authority has insufficient land to offer in exchange. This cash payment is deposited into a special U.S. Treasury fund specifically designated for acquiring replacement lands. When appropriated, these funds may be used within the same State to acquire replacement lands suitable for NFS purposes.

This program is cyclical, and the availability of funds depends on deposits into the fund by individual school districts or State or local governments when they acquire a tract of NFS land.

Increase for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Acquisition of lands to complete land exchanges	$ 1,065	1,105	+40

An increase of $40,000 is proposed from the 1991 base.

This funding level will provide for the acquisition of 713 acres, the same as planned for FY 1990.

Objective class information

Land and structures	+40
Total	+40

Forest
Service

Gifts, Donations, and Bequests for Forest and Rangeland Research

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base (Dollars in thousands)	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
Gifts, donations, and bequests for forest and rangeland research .... $	2	30	30	30	30	0	0
FTE	1	1	1	1	1	0	0

Appropriation Summary Statement

Gifts, donations, and Bequests received for forest and rangeland research, but not needed for current operations, are invested in public debt securities. This appropriation makes all such deposits available to the Forest Service to invest or reinvest in public debt securities.

Authorities

P.L. 95-307, Forest and Rangeland Renewable Resources Research Act, June 30, 1978 (16 U.S.C. 1643). Section 4(b).

> Acceptance of gifts, donations and bequests for deposit into a special account and to be used to establish or operate any forest and rangeland research facility; or perform any forest and rangeland renewable resource research activity authorized by this Act. Funds in the account thereof not needed for current operations may be invested in public debt securities.
>
> Such sums as appropriated; no expiration date.

Objective

To receive gifts, donations, and bequests and to appropriate them for forest and rangeland research activities.

Some of the funds are used to sponsor a Heritage Chair scientist to work for a period of time on areas such as wood utilization, forest insects and disease, or forest economics research, and to finance related research symposia. Balances not needed for recurrent operations are invested in interest bearing securities.

No change for 1991

Range Betterment Fund

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
			(Dollars in thousands)				
Range Betterment Fund ....$	3,946	4,700	4,643	4,643	4,578	-65	-65
FTE	80	84	84	84	81	-3	-3

Appropriation Summary Statement

This appropriation is financed from grazing fee receipts for a range betterment program on National Forests in the 16 Western States.

Range betterment activities involve installing both structural and nonstructural range improvements. These include fence construction, water developments, seeding, weed control, and fish and wildlife habitat enhancement projects.

Authorities

P.L. 94-579, Federal Land Policy and Management Act of 1976; (43 U.S.C. 1751), as amended by P.L. 95-514, Public Rangelands Improvement Act of 1978 (43 U.S.C. 1751(b)(1) 902, 1,904 and 1,907).
Range management use of one-half of grazing receipts from national forests in 16 Western States.
One-half of grazing receipts per annum; no expiration date.

Objectives

To arrest range deterioration and improve range forage conditions with benefits to livestock production, watershed protection, and wildlife. To make cost effective investments in range improvements on areas of highest priority on national forests in the 16 Western States. To demonstrate sound improvement practices on associated private and other State and Federal lands by the rehabilitation, protection, and improvement of soil and vegetation cover on National Forest lands.

Program description

These appropriated funds are used for range rehabilitation, protection, and improvements. One-half of the funds is used on the national forest in which the funds originate, and the other half is for range betterment activities within that region.

The majority of the funds to plan and administer this program are included in the Range Management section under the National Forest System appropriation, or other benefiting appropriations. Less than six percent of planning and administration costs are included in the Range Betterment Fund. Outputs and accomplishments, for both range management and range betterment fund, are shown as a combined total in the Range Management section under the National Forest System appropriation.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Range Betterment Fund. . . . . . . $	4,643	4,578	-65
FTE	84	81	-3

A decrease of $65,000 is proposed from the 1991 base.

This proposed level is based on 50 percent of the estimated FY 1991 grazing receipts from national forests in 16 Western States.

Object class information

Salaries and benefits.	-42
Other services.	-9
Supplies, materials, and equipment.	-14
Total.	-65

Forest Service

Operation and Maintenance of Recreation Facilities

(Dollars in thousands)

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
Current law	$	0	0	0	0	9,084	+9,084	+9,084
	FTE	0	0	0	0	180	+180	+180
Proposed law	$	0	0	0	0	7,533	+7,533	+7,533
	FTE	0	0	0	0	70	+70	+70
Total, Operation and maintenance of recreation facilities	$	0	0	0	0	16,617	+16,617	+16,617
	FTE	0	0	0	0	250	+250	+250

Appropriation Summary Statement

The Land and Water Conservation Fund (L&WCF) Act of 1965, as amended by the Omnibus Budget Reconciliation Act of 1987, places receipts from fees collected at authorized Forest Service operated recreation sites into a special Treasury account. These funds are to be used for resource protection, research, interpretation and maintenance activities of Forest Service recreation facilities. Proposed legislation would authorize fees to be charged at additional types of recreation sites. These additional fees would be deposited into the special Treasury account for the operation, maintenance, rehabilitation, and reconstruction of recreation and trails facilities.

Authorities

P.L. 88-528, Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460l-6a), Section 4; as amended by P.L. 100-203, Section 5201(c).

For activities related to resource protection in recreation areas. Such sums as are appropriated from a special receipts account; no expiration.

Objective

To provide a spectrum of high quality recreation opportunities. To manage, maintain, rehabilitate, and reconstruct recreation and trail facilities utilizing recreation fee receipts.

Program description

The L&WCF Act of 1965, as amended, places the fees collected at authorized Forest Service operated recreation sites during the prior fiscal year into a special Treasury account. Estimated deposits available in FY 1991, after a reduction of 25 percent for payments to States and counties under the Act of March 1, 1911 (U.S.C. 500), are $9 million

The Act of March 4, 1913 (16 U.S.C. 501) requires that 10 percent of monies received from the national forests be used for construction and maintenance of forest roads and trails. As a result of this Act, 10 percent of the fees collected under the L&WCF Act, as amended, must be used for these purposes. New legislation is required to eliminate reduction of receipts due to this Act.

New legislation is also required to expand the kinds of facilities and services for which L&WCF fees can be charged, and to place these receipts into the special L&WCF Treasury account, making them available in FY 1992. Estimated deposits resulting from enactment of such legislation, after a reduction of 25 percent for payments to States and counties under the Act of March 1, 1911 (16 U.S.C. 500), are $7.5 million.

Increae for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Operation and maintenance of recreation facilities	$	0	16,617	+16,617
	FTE	0	250	+250

The program increase is $16,617,000 for FY 1991.

The funds from the return of existing fees will be used for operation, maintenance, interpretation, and minor rehabilitation of existing recreation areas and facilities. In addition, these funds would facilitate the collection of additional recreation user fee receipts.

The funds from the return of new fees will be focused on rehabilitation and reconstruction projects to revitalize and modernize recreation facilities. The proposed projects associated with this $7.5 million of Operation and Maintenance of Recreation Facilities monies are displayed in Exhibit 3 of the Construction Appropriation, Recreation Construction, section of this document.

Object class information

Salaries and benefits	+6,733
Travel	+350
Transportation of things	+165
Rent, communications, and utilities	+532
Printing and reproduction	+64
Other services	+5,776
Supplies, materials, and equipment	+1,510
Land and structures	+1,487
Total	+16,617

Forest Service

Youth Conservation Corps

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)				
Youth Conservation Corps	$	(1,000)	(1,000)	(1,000)	(1,000)	0	(-1,000)	(-1,000)

Authorities The Act of August 13, 1970 (16 U.S.C. 1701-06), as amended, authorizes the Youth Conservation Corps (YCC) program on Federal lands.

Objective To do needed conservation work on public lands and waters; to provide gainful employment for 15- to 18-year-old males and females from all social, economic, ethnic, and racial classifications; and to develop an environmental understanding and appreciation during their participation in the program.

Program description The Forest Service was authorized to use not less than $1 million of available funds in 1989 for a YCC program. The actual program operated was $2.2 million, serving 1,276 young people.

In FY 1990, a YCC program of not less than $1 million for high priority projects will be carried out with funds from benefiting Forest Service programs.

Additional information on accomplishments for YCC is in the section on human resource programs.

A YCC program is not proposed for FY 1991.

Forest Service

Working Capital Fund

Appropriation Summary Statement

The Working Capital Fund was established by the Department of Agriculture Organic Act of August 3, 1956, as amended by the Act of October 23, 1962 (16 U.S.C. 579b). It is a self-sustaining revolving fund which provides services to the National Forest System, Experiment Stations, and other Federal agencies, and, as provided by law, to State and private agencies and persons who cooperate with the Forest Service in fire control and other authorized programs.

Authorities

P.L. 84-979, Department of Agriculture Organic Act of 1956, as amended by the Act of October 23, 1962 (16 U.S.C. 579b).

To provide services to Forest Service programs though use of a revolving fund.

Such sums as are available; no expiration date.

Objective

To provide orderly and efficient financial management for the service and supply operations of the Forest Service.

Program description

The forestry-related supply and support services provided by the Working Capital Fund includes the following:

1. Equipment: a service that owns, operates, maintains, replaces, and repairs motor driven and other equipment. Administrative units rent this equipment at rates that recover the cost of operation, repair, maintenance, management, and depreciation. The rates also include an increment that provides additional cash which, when added to depreciation earnings and the residual value of equipment, provides sufficient funds to replace the equipment.

2. Aircraft: a service that operates, maintains, and repairs Agency-owned aircraft used in fire surveillance, suppression, and other Forest Service programs. The aircraft are rented at rates that recover the cost of depreciation, management, operation, maintenance, and repair. Aircraft replacement costs are financed from appropriated funds, the Forest Service Working Capital Fund, or a combination of both.

3. Supply: a service that provides the following:

- Photo reproduction laboratories, which store, reproduce, and supply photographs of National Forest System lands and activities at cost.

- Sign shops, which manufacture and supply special signs for use in regulating traffic and as information to the public and other users of the National Forest System.

- Subsistence facilities, which prepare and serve meals for Forest Service crews working in areas where adequate public restaurant facilities are not available.

- Seed supply service, which provides tree seeds for direct seeding or sowing in nurseries for the production of trees. The work under this activity includes the purchase or collection of cones, extraction of the seeds, cleaning and testing of the seeds, storage, and later delivery of the seeds. This activity usually operates in conjunction with a tree nursery.

4. Tree Nurseries: a service that operates forest tree nurseries and cold storage facilities for storage of tree seedlings for sale to Forest Service programs, State foresters, and other cooperators, at cost.

Volume of business for the various major activities of the Working Capital Fund:

	1989 Final	1990 Estimate	1991 Estimate
	(Dollars in thousands)		
Equipment	$73,630	$74,689	$80,595
Aircraft	4,063	4,261	4,357
Supply	5,306	3,053	3,641
Nursery	18,598	16,997	19,596
Total	$101,597	$99,000	$108,189

The Working Capital Fund requires no cash appropriation. Initially, its assets were purchased by regular Forest Service appropriations and were donated to the fund.

Estimated expenditures by the Working Capital Fund are based on plans submitted by Forest Service field offices.

Forest
Service

Tongass Timber Supply Fund

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
Tongass Timber Supply Fund	$ 1/	35,999	(52,441)	(52,441)	(54,727)	(43,887)	(-8,554)	(-10,840)
		399	(430)	(430)	(430)	(376)	(-54)	(-54)

(Dollars in thousands)

1/ Amounts shown in ( ) are for comparisons only.

Appropriation Summary Statement

To maintain the timber supply from the Tongass National Forest to dependent industry, at a rate of 4.5 billion board feet BBF per decade.

Authorities

P.L. 100-203, Omnibus Budget Reconciliation Act of 1987, December 22, 1987. Section 5202. Tongass Timber Supply Fund.

Tongass Timber Supply Fund is to maintain the timber supply from the Tongass National Forest to dependent industry at a rate of 4.5 BBF per decade.

Annual appropriation. October 1, 1987, and extending until September 30, 1989.

Objective

To protect, manage, and provide public use of the Tongass National Forest resources, while maintaining an available timber supply from the forest, at a rate of 4.5 billion board feet per decade, provided by 16 U.S.C. 539d(a).

Program description

Prior to FY 1988, the budget for the Tongass National Forest consisted of funds annually appropriated to the Forest Service under the National Forest System and Construction appropriations and through permanent appropriations and trust funds. A majority of the funding available to the Tongass National Forest is derived from national forest receipts provided through the Tongass Timber Supply Fund, a permanent indefinite appropriation.

For a two-year period beginning in FY 1988, Congress made the Tongass National Forest program subject to annual appropriations (P.L. 100-203, Section 5202). For FY 1988, Congress combined all funding for the Tongass National Forest, except trust and other permanent appropriations, into the Tongass Timber Supply Fund. For FY 1989, Congress separated these accounts.

For FY 1990, Congress combined all funding for the Tongass National Forest, except trust and other permanent appropriations, into the Tongass Timber Supply Fund, and limits spending to $52,441,000.

For FY 1991 funding is the same as prior to FY 1988. See Permanent Appropriations, Tongass Timber Supply Fund section.

Forest
Service

Resource Management, Timber Receipts

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from Base
		(Dollars in thousands)					
Forest trail maintenance	$	5,850	0	0	0	0	0
	FTE	70	0	0	0	0	0
Timber sales admin. & mgmt.	$	29,252	0	0	0	0	0
	FTE	349	0	0	0	0	0
Reforestation & stand impr.	$	9,751	0	0	0	0	0
	Reforestation, acres	6,218	0	0	0	0	0
	Stand improvement, acres	590	0	0	0	0	0
	FTE	116	0	0	0	0	0
Recreation Use:							
Wilderness management	$	4,875	0	0	0	0	0
	FTE	58	0	0	0	0	0
Cultural resource mgmt.	$	4,875	0	0	0	0	0
	FTE	58	0	0	0	0	0
Subtotal, Recreation Use	$	9,750	0	0	0	0	0
	FTE	116	0	0	0	0	0
Wildlife and fish habitat management	$	19,501	0	0	0	0	0
	Wildlife, acres	35,415	0	0	0	0	0
	Wildlife, structures	1,672	0	0	0	0	0
	Inland fish, acres	1,017	0	0	0	0	0
	Inland fish, structures	865	0	0	0	0	0
	ET & SS, acres	67,626	0	0	0	0	0
	ET & SS, structures	210	0	0	0	0	0
	Anadromous, acres	1,525	0	0	0	0	0
	Anadromous, structures	1,298	0	0	0	0	0
	FTE	232	0	0	0	0	0
Soil, water, and air mgmt.	$	19,501	0	0	0	0	0
	Acres	20,775	0	0	0	0	0
	FTE	232	0	0	0	0	0
Total, NFS	$	93,605	0	0	0	0	0
	FTE	1,115	0	0	0	0	0
Trail construction	$	3,900	0	0	0	0	0
	Miles	341	0	0	0	0	0
	FTE	46	0	0	0	0	0
Total	$ 1/	97,505	0	0	0	0	0
	FTE	1,161	0	0	0	0	0

1/ Each of these items is displayed in the National Forest System or Construction lead tables.

Appropriation Summary Statement

To use funds to augment current National Forest System resource activities and provide additional outputs.

Authorities

P.L.101-121, Interior and Related Agencies Appropriations Act of FY 1990; Title II, Administrative Provisions, Forest Service.

To provide timber receipts in excess of those shown in the FY 1989 budget appendix for Resource management purposes as specified the Act.

All FY 1989 National Forest timber receipts collected in excess of amounts shown in the FY 1990 Budget Appendix; expires when funds are expended.

Objective

To provide additional funds for resource management.

Program description

That such excess amounts made available shall not exceed $65,000,000 and the legislation provides that funds be used for the following purposes:

Activity	Percent	Dollars in Thousands
Trail maintenance	6	$3,900
Trail construction	4	2,600
Wildlife and fish habitat management	20	13,000
Soil, water, and air management	20	13,000
Cultural resource management	5	3,250
Wilderness management	5	3,250
Reforestation	10	6,500
Timber sale administration and management, timber support, and advanced sale preparation work for FY 1991 and 1992	30	19,500
Total	100	$65,000

An additional $32,000,000 is provided for necessary timber sales administration and management, including all timber support costs, and design and construction of forest roads. Of this amount, $12,000,000 is provided in support of the Pacific Northwest Region spotted owl and $20,000,000 for the other regions without consideration of the availability of funds in the Pacific Northwest Region.

There are no excess receipts available from the FY 1989 timber receipts collected for the FY 1990 program.

ACQUISITION OF LANDS FOR NATIONAL FORESTS

SPECIAL ACTS

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5208-0-2-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	665	1,054	1,103
	Financing:			
21.40	Unobligated balance available, start of year	-1	0	0
24.40	Unobligated balance available, end of year	302	0	0
25.00	Unobligated balance lapsing			
39.00	Budget authority	966	1,054	1,103
	Budget authority:			
40.00	Appropriation	966	1,068	1,103
40.00	Reduction pursuant to P.L. 99-177	0	-14	0
43.00	Appropropriated (adjusted).	966	1,054	1,103
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	665	1,054	1,103
72.40	Obligated balance, start of year	454	418	426
74.40	Obligated balance, end of year	-418	-426	-431
90.00	Outlays	701	1,046	1,098

OBJECT CLASSIFICATION (in thousands of dollars)

		1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	22	24	24
	Personnel benefits:			
12.1	Civilian	3	4	4
21.0	Travel and transportation of persons	2	4	4
25.0	Other services	4	6	6
32.0	Land and structures	634	1,016	1,065
99.9	Total obligations	665	1,054	1,103

PERSONNEL SUMMARY

	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	1	1	1
Total compensable workyears:			
Full-time equivalent employment	1	1	1
Average GS grade	12.35	12.35	12.35
Average GS salary	$37,486	$38,498	$39,819

ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5216-0-2-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	152	3,144	1,105
	Financing:			
	Offsetting collections from:			
21.40	Unobligated balance available, start of year	-1,906	-2,079	0
24.40	Unobligated balance available, end of year	2,079	0	0
39.00	Budget authority	325	1,065	1,105
	Budget authority:			
40.00	Appropriation	325	1,070	1,105
40.00	Reduction pursuant to P.L. 99-177	0	-5	0
43.00	Appropriation (adjusted)	325	1,065	1,105
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	152	3,144	1,105
72.40	Obligated balance, start of year	381	24	2,183
74.40	Obligated balance, end of year	-24	-2,183	-2,187
90.00	Outlays	509	985	1,101

OBJECT CLASSIFICATION (in thousands of dollars)

	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	8	0	0
21.0	Travel and transportation of persons	0	22	8
25.0	Other services	1	22	7
32.0	Land and structures	143	3,100	1,090
99.9	Total obligations	152	3,144	1,105

GIFTS, DONATIONS AND BEQUESTS FOR FOREST AND RANGELAND RESEARCH

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-8034-0-7-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	46	375	30
	Financing:			
	Offsetting collection from:			
11.00	Federal funds	-161	-30	0
21.40	Unobligated balance available, start of year	-133	-315	0
21.40	U.S. securities (par value)	-65	0	0
24.40	Unobligated balance available, end of year	315	0	0
40.00	Budget authority (appropriation)	2	30	30
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	-115	345	30
72.40	Obligated balance, start of year	15	10	0
74.40	Obligated balance, end of year	-10	0	0
90.00	Outlays	-110	355	30

RANGE BETTERMENT FUND

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5207-0-2-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	3,851	5,623	4,578
	Financing:			
	Offsetting collections from:			
21.40	Unobligated balance available, start of year	-885	-980	0
24.40	Unobligated balance available, end of year	980	0	0
39.00	Budget authority	3,946	4,643	4,578
	Budget authority:			
40.00	Appropriation	3,946	4,700	4,578
40.00	Reduction pursuant to P.L. 99-177	0	-57	0
43.00	Appropriation (adjusted)	3,946	4,643	4,578
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	3,851	5,623	4,578
72.40	Obligated balance, start of year	976	983	2,103
74.40	Obligated balance, end of year	-983	-2,103	-2,090
90.00	Outlays	3,844	4,503	4,591

RANGE BETTERMENT FUND

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-5207-0-2-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	543	586	584
11.3	Other than full-time permanent	759	818	816
11.5	Other personnel compensation	95	102	102
11.9	Total personnel compensation	1,397	1,506	1,502
	Personnel benefits:			
12.1	Civilian	166	197	216
13.0	Benefits for former personnel	1	1	1
21.0	Travel and transportation of persons	28	48	35
22.0	Transportation of things	24	41	30
23.3	Communications, utilities, and miscellaneous charges	34	58	42
24.0	Printing and reproduction	1	2	1
25.0	Other services	670	1,148	838
26.0	Supplies and materials	1,347	2,308	1,685
31.0	Equipment	106	182	132
32.0	Land and structures	77	132	96
99.9	Total obligations	3,851	5,623	4,578

PERSONNEL SUMMARY

Direct:			
Total number of full-time permanent positions	60	63	60
Total compensable workyears:			
Full-time equivalent employment	80	84	81
Full-time equivalent of overtime and holiday hours	4	4	4
Average GS grade	8.47	8.47	8.47
Average GS salary	$24,393	$25,052	$25,911
Average salary of ungraded positions	$23,525	$24,160	$24,989

OPERATION AND MAINTENANCE OF RECREATION FACILITIES

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5072-0-2-303	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	**Total obligations**	0	0	9,084
	Financing:			
40.00	**Budget authority (appropriation) (indefinite) (special fund)**	0	0	9,084
	Relation of obligations to outlays:			
71.00	**Obligations incurred, net**	0	0	9,084
74.40	**Obligated balance, end of year**	0	0	-1,817
90.00	**Outlays**	0	0	7,267

SUMMARY OF BUDGET AUTHORITY and OUTLAYS (in thousands of dollars)

Enacted/requested:				
	Budget authority	0	0	9,084
	Outlays	0	0	7,267
Proposed for later transmittal under proposed legislation:				
	Budget authority	0	0	7,533
	Outlays	0	0	6,026
Total:	Budget authority	0	0	16,617
	Outlays	0	0	13,293

OPERATION AND MAINTENANCE OF RECREATION FACILITIES

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5072-0-2-303	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	0	0	4,228
11.3	Other than full-time permanent	0	0	968
11.9	Total personnel compensation	0	0	5,196
	Personnel benefits:			
12.1	Civilian	0	0	961
13.0	Benefits for former personnel	0	0	65
21.0	Travel and transportation of persons	0	0	258
22.0	Transportation of things	0	0	108
23.1	Rental payments to GSA	0	0	100
23.2	Rental payments to others	0	0	87
23.3	Communications, utilities, and miscellaneous charges	0	0	240
24.0	Printing and reproduction	0	0	41
25.0	Other services	0	0	1,313
26.0	Supplies and materials	0	0	471
31.0	Equipment	0	0	214
32.0	Land and structures	0	0	27
42.0	Insurance claims and indemnities	0	0	2
44.0	Refunds	0	0	1
99.9	Total obligations	0	0	9,084

PERSONNEL SUMMARY

Direct:			
Total number of full-time permanent positions	0	0	159
Total compensable workyears:			
Full-time equivalent employment	0	0	180
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	0	0	9.74
Average GS salary	$0	$0	$29,742
Average salary of ungraded positions	$0	$0	$25,382

OPERATION AND MAINTENANCE OF RECREATION FACILITIES

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5072-2-2-303	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	0	0	7.533
	Financing:			
40.00	Budget authority (appropriation) (indefinite) (special fund)	0	0	7.533
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	0	0	7.533
74.40	Obligated balance, end of year	0	0	-1.507
90.00	Outlays	0	0	6.026

OBJECT CLASSIFICATION (in thousands of dollars)

		1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	0	0	659
11.3	Other than full-time permanent	0	0	211
11.5	Other personnel compensation	0	0	36
11.9	Total personnel compensation	0	0	906
	Personnel benefits:			
12.1	Civilian	0	0	139
13.0	Benefits for former personnel	0	0	37
21.0	Travel and transportation of persons	0	0	38
23.1	Rental payments to GSA	0	0	100
23.2	Rental payments to others	0	0	2
23.3	Communications, utilities, and miscellaneous charges	0	0	58
24.0	Printing and reproduction	0	0	8
25.0	Other services	0	0	3.869
26.0	Supplies and materials	0	0	645
31.0	Equipment	0	0	101
32.0	Land and structures	0	0	1.626
44.0	Refunds	0	0	4
99.9	Total obligations	0	0	7.533

PERSONNEL SUMMARY

	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	0	0	62
Total compensable workyears:			
Full-time equivalent employment	0	0	70
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	0	0	9.74
Average GS salary	$0	$0	$29.001
Average salary of ungraded positions	$0	$0	$25.494

WORKING CAPITAL FUND

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-4605-0-4-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	1. Operating expenses	117,261	68,126	72,249
	2. Capital investment	377	35,940	35,940
10.00	Total obligations	117,638	104,066	108,189
	Financing:			
	Offsetting collections from:			
11.00	Federal funds	-91,262	-82,189	-98,088
14.00	Non-Federal sources	-10,334	-10,101	-10,101
21.90	Unobligated balance available, start of year	-54,882	-38,840	-27,064
24.90	Unobligated balance available, end of year	38,840	27,064	27,064
39.00	Budget authority	0	0	0
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	16,041	11,776	0
72.90	Obligated balance, start of year	40,480	37,694	49,470
74.40	Obligated balance, end of year	-37,694	-49,470	-49,470
90.00	Outlays	18,827	0	0

OBJECT CLASSIFICATION (in thousands of dollars)

		1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	18,977	16,402	19,039
11.3	Other than full-time permanent	5,665	4,767	5,210
11.5	Other personnel compensation	1,115	938	1,025
11.9	Total personnel compensation	25,757	22,107	25,274
	Personnel benefits:			
12.1	Civilian	4,130	3,545	4,053
13.0	Benefits for former personnel	691	597	693
21.0	Travel and transportation of persons	850	708	761
22.0	Transportation of things	426	355	382
23.1	Rental payments to GSA	882	1,008	1,027
23.2	Rental payments to others	669	557	599
23.3	Communications, utilities, and miscellaneous charges	1,679	1,398	1,503
24.0	Printing and reproduction	47	39	42
25.0	Other services	21,409	17,823	19,162
26.0	Supplies and materials	27,035	22,505	24,201
31.0	Equipment	33,482	33,232	30,285
32.0	Land and structures	377	314	338
42.0	Insurance claims and indemnities	29	24	26
44.0	Refunds	175	-146	-157
99.9	Total obligations	117,638	104,066	108,189

RESOURCE MANAGEMENT, TIMBER RECEIPTS

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5220-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	1. Trail maintenance	2,978	2,873	0
	2. Trail construction	1,985	1,915	0
	3. Wildlife and fish habitat	9,925	9,576	0
	4. Soil, water, and air management	9,925	9,576	0
	5. Cultural resource management	2,481	2,394	0
	6. Wilderness management	2,481	2,394	0
	7. Reforestation	4,963	4,788	0
	8. Timber sales administration and management	14,888	14,363	0
10.00	Total obligations	49,626	47,879	0
	Financing:			
21.40	Unobligated balance available, start of year	0	-47,879	0
24.40	Unobligated balance available, end of year	47,879	0	0
40.00	Budget authority	97,505	0	0
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	49,626	47,879	0
72.40	Obligated balance, start of year	0	15,201	0
74.40	Obligated balance, end of year	-15,201	0	0
90.00	Outlays	34,425	63,080	0

OBJECT CLASSIFICATION (in thousands of dollars)

	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	13,948	0	0
11.3	Other than full-time permanent	9,408	0	0
11.5	Other personnel compensation	1,507	0	0
11.8	Special personal services payments	1	0	0
11.9	Total personnel compensation	24,864	0	0
	Personnel benefits:			
12.1	Civilian	3,924	0	0
13.0	Benefits for former personnel	21	0	0
21.0	Travel and transportation of persons	1,095	2,521	0
22.0	Transportation of things	533	1,227	0
23.1	Rental payments to GSA	19	0	0
23.2	Rental payments to others	104	239	0
23.3	Communications, utilities, and miscellaneous charges	332	764	0
24.0	Printing and reproduction	108	249	0
25.0	Other services	13,514	31,111	0
26.0	Supplies and materials	3,055	7,032	0
31.0	Equipment	1,648	3,794	0
32.0	Land and structures	384	884	0
41.0	Grants, subsidies, and contributions	3	7	0
42.0	Insurance claims and indemnities	22	51	0
99.9	Total obligations	49,626	47,879	0

RESOURCE MANAGEMENT, TIMBER RECEIPTS

PERSONNEL SUMMARY

Identification code: 12-5220-0-1-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	865	0	0
Total compensable workyears:			
Full-time equivalent employment	1,161	0	0
Full-time equivalent of overtime and holiday hours	53	0	0
Average GS grade	9.42	9.42	9.42
Average GS salary	$26,363	$27,075	$28,004
Average salary of ungraded positions	$25,116	$25,794	$26,679

HIGHWAY CONSTRUCTION: MOUNT ST. HELENS NATIONAL MONUMENT

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-8029-0-7-401	1989 actual	1990 est.	1991 est.
39.00	Budget authority	0	0	0
	Budget authority:			
40.00	Appropriation	5,333	0	0
40.49	Portion applied to liquidate contract authority	-2,333	0	0
40.50	Balance of apppropriation to liquidate contract authority withdrawn	-3,000	0	0
43.00	Appropriation (adjusted)	0	0	0
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	0	0	0
72.40	Obligated balance, start of year	1,644	737	0
74.40	Obligated balance, end of year	-737	0	0
90.00	Outlays	907	737	0

OTHER APPROPRIATIONS

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-9911-0-1-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	1. Acquisition of lands for Winema National Forest, Oregon....	24	0	0
	2. Forest management, protection and utilization..................	221	0	0
	3. Tongass timber supply fund..........	32,204	3,716	0
	Reimbursable program..............................	29	0	0
10.00	Total obligations...............	32,478	3,716	0
	Financing:			
11.00	Offsetting collections from: Federal funds................................	-29	0	0
21.40	Unobligated balance available, start of year..	-166	-3,716	0
24.40	Unobligated balance available, end of year..	3,716	0	0
40.00	Budget authority	35,999	0	0
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	32,449	3,716	0
72.10	Receivables in excess of obligations, start of year...................................	-38	0	0
72.40	Obligated balance, start of year	0	5,464	0
74.40	Obligated balance, end of year	-5,464	0	0
90.00	Outlays..	26,947	9,180	0
	Distribution of budget authority by account:			
	Tongass timber supply fund....................	35,999	0	0
	Distribution of outlays by account:			
	Forest management, Protection and utilization..................	-197	0	0
	Tongass timber supply fund.....................	27,144	9,180	0

OTHER APPROPRIATIONS

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-9911-0-1-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	10,524	0	0
11.3	Other than full-time permanent	853	0	0
11.5	Other personnel compensation	377	0	0
11.9	Total personnel compensation	11,754	0	0
	Personnel benefits:			
12.1	Civilian	5,524	0	0
13.0	Benefits for former personnel	101	0	0
21.0	Travel and transportation of persons	2,735	504	0
22.0	Transportation of things	736	136	0
23.1	Rental payments to GSA	1,574	1,227	0
23.2	Rental payments to others	204	38	0
23.3	Communications, utilities, and miscellaneous charges	842	155	0
24.0	Printing and reproduction	168	31	0
25.0	Other services	5,929	1,092	0
26.0	Supplies and materials	934	174	0
31.0	Equipment	776	143	0
32.0	Land and structures	1,170	216	0
42.0	Insurance claims and indemnities	1	0	0
44.0	Refunds	1	0	0
99.0	Subtotal, direct obligations	32,449	3,716	0
99.0	Reimbursable obligations	29	0	0
99.9	Total obligations	32,478	3,716	0

PERSONNEL SUMMARY

	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	347	0	0
Total compensable workyears:			
Full-time equivalent employment	399	0	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average GS grade	9.43	0	0
Average GS salary	$26,363	$0	$0
Average salary of ungraded positions	$25,116	$0	$0

Forest
Service

Permanent Appropriations--Working Funds

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec (-) from 1990	Inc. (+) or Dec (-) from base
				(Dollars in thousands)			
Brush Disposal							
Budget authority .... $	54,458	64,662	64,662	67,642	66,279	+1,617	-1363
Operating level .... $ 1/	64,660	64,662	64,662	67,642	66,279	+1,617	-1363
Thousand acres	366.9	350.0	350.0	350.0	335.4	-14.6	-14.6
FTE	1,386	1,358	1,358	1,358	1,358	0	0
License program: Smokey Bear and Woodsy Owl							
Budget authority .... $	77	119	119	119	118	-1	-1
FTE	1	1	1	1	1	0	0
Restoration of Forest Lands and Improvements							
Budget authority .... $	122	106	106	106	107	+1	+1
FTE	2	2	2	2	2	0	0
Roads and trail for States, National Forest Fund							
Budget authority .... $ 2/	(92,874)	0	0	0	0	0	0
Timber Roads, Purchaser Elections, Forest Service (PEP)							
Budget authority .... $ 3/	9,837	4,878	4,878	0	4,859	-19	+4,859
Operating level .... $ 1/	2,762	4,018	4,018	0	4,859	+841	+4,859
FTE	8	3	3	0	3	0	+3
Timber Salvage Sales							
Budget authority .... $	131,967	89,997	89,997	82,792	52,914	-37,083	-29878
Operating level .... $ 1/	47,561	89,997	89,997	82,792	52,914	-37,083	-29878
FTE	1,842	1,412	1,412	1,412	520	-892	-892
Tongass Timber Supply Fund							
Budget authority .... $	(36,999)	52,441	52,441	54,727	43,887	-8,554	-10,840
FTE	(360)	430	430	430	376	-54	-54
Operation and Maintenance of Quarters							
Budget authority .... $	5,648	5,770	5,770	5,770	5,888	+118	+118
FTE	84	85	85	85	85	0	0
Total,							
Budget authority .... $	202,097	167,873	167,873	131,[illegible]	164,[illegible]	-3[illegible],921	-37104
FTE	2,920	2,391	2,391	2,396	[illegible]	-946	-943

1/ Budget authority is determined by receipts collected during the fiscal year. The operating level has been included as a footnote in certain accounts so that unit costs will not be distorted.

2/ Proposed for repeal in FY 1991 as part of the recreation fee proposal.

3/ Recission of $40 million in FY 1989 is not reflected in this table.

Appropriation Summary Statement

This section includes the permanent appropriations that are separate Forest Service activities or which are combined with other Forest Service activities to accomplish common tasks.

The FY 1991 proposed legislation for the recreation fee expansion includes the repeal of the Roads and Trails for States, ten percent fund authority in 16 U.S.C 501.

Authorities

P.L. 62-430, Act of March 4, 1913 (16 U.S.C. 501) (Department of Agriculture Appropriations Act).
Forest road and trail improvements—10 percent financed from National Forest receipts.
Permanent appropriation; no expiration date.

P.L. 64-190, Act of August 11, 1916 (Department of Agriculture Appropriations Act), as amended (16 U.S.C. 490). Section 6.
Disposal of brush and other debris due to timber sales in National Forests.
Permanent appropriation; no expiration date.

P.L. 82-327, Act of May 23, 1952, as amended (16 U.S.C. 580p-2). Section 3.
Forest fire prevention campaign (Smokey Bear).
Permanent appropriation; no expiration date.

P.L. 85-464, Act of June 20, 1958 (16 U.S.C. 579c). Section 7.
Restoration, improvements, and protection of Forest Service lands.
Permanent appropriation; no expiration date.

P.L. 93-318, Act of June 22, 1974, as amended (16 U.S.C. 580p-3). Sections 1-6.
Woodsy owl antipollution campaign.
Permanent appropriation, no expiration date.

P.L. 94-588, National Forest Management Act of 1976, October 22, 1976 (16 U.S.C. 472a(h) and (i)). Section 14(h) and (i).
Timber salvage fund for harvesting insect infested, dead, and damaged trees. Section 472a(h).
Timber purchaser roads constructed by the Forest Service. Section 472a(i).
Permanent appropriation; no expiration date.

P.L. 96-487, Alaska National Interest Lands Conservation Act, December 2, 1980 (16 U.S.C. 539d). Section 705a.
Tongass timber supply fund to maintain timber at specified level on Tongass National Forest.
Permanent appropriation; no expiration date.

P.L. 98-473, Title I, Continuing Appropriations Act of 1985, Interior and Related Agency Appropriations, Title III (98 Stat. 1874; 5 U.S.C. 5911 note). Section 320.
Fund for the operation and maintenance of Forest Service Quarters
Permanent appropriation; no expiration date.

Brush Disposal

Objective

To dispose of brush and other debris resulting from cutting operations on timber sale areas in order to protect and maintain national forest resources.

Program description

Timber harvest activities increase fire hazards because of the dry fuel that accumulates as logging slash. Slash also impairs reforestation, contributes to the buildup of insect populations, damages stream channels, looks unsightly, and limits recreational access.

Brush is disposed of by crushing, chipping, burning, or a combination of these methods.

National forest timber sale contracts require treatment, or deposit of funds for treatment, of debris created by the timber sale operator. When economical and expedient, the work is performed by the timber purchaser; however, the purchaser can also request the Forest Service to do the work by depositing funds to cover the cost of the work. This activity is authorized by Section 6 of the Act of April 24, 1950 (16 U.S.C.490).

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Brush disposal	$	67,642	66,279	-1,363
	FTE	1,358	1,358	0

A decrease of $1,363,000 is proposed from the 1991 base.

This program level provides for the treatment of 335,400 acres of national forest lands where the timber harvest has been completed and where the resulting fuels are ready for treatment. This is a decrease of 14,600 acres from the FY 1991 base.

Object class information

Transportation of things	-75
Rent, communications, and utilities	-49
Other services	-239
Supplies, materials, and equipment	-481
Land and structures	-524
Total	-1,363

Licensee Programs, Smokey Bear and Woodsy Owl

Objective To prevent forest fires and promote environmental quality.

Program Description Fees for the use of the Smokey Bear and Woodsy owl characters by private enterprises are collected under regulations formulated by the Secretary of Agriculture. They are available to fund the following:

- Smokey Bear; to further the nationwide forest fire prevention campaign (16 U.S.C. 580p).
- Woodsy Owl; to promote wise use of the environment, and programs that foster maintenance and improvement of the environmental quality (16 U.S.C. 580p).

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Licensee programs, Smokey bear and woodsy owl	$	119	118	-1
	FTE	1	1	0

Object class information A decrease of $1,000 is proposed from the 1991 base.

Other services	-1
Total	-1

Restoration of Forest Lands and Improvements

Objective

To complete all necessary work to return national forest lands to optimum production in a timely manner.

Program Description

This program includes recoveries from cash bonds or forfeitures under surety bonds by permittees or timber purchasers who fail to complete performance of improvement, protection, or rehabilitation work required under permit or timber sale contract.

The recovered funds are used to cover the cost to the Government of completing the work on national forest lands. Funds received as settlement of a claim are used for improvement, protection, or rehabilitation work made necessary by the action which led to the cash settlement (Act of June 20, 1958, 16 U.S.C. 579c).

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Restoration of forest land and improvements	$	106	107	+1
	FTE	2	2	0

An increase of $1,000 is proposed from the 1991 base.

Most receipts are used to reimburse programs under a recent Comptroller General decision allowing direct reimbursement to benefiting funds, rather than requiring all funds be deposited and used from this permanent appropriation.

Object class information

Other services	+1
Total	+1

Timber Roads, Purchaser Elections, Forest Service (PEP)

Objective

To build National Forest System timber sale roads for small business timber sale purchasers who elect to have the roads built by the Forest Service.

Program description

This program, referred to as the Purchaser Election Program (PEP), is part of the total financed Forest Service annual road program.

For a road to qualify, the timber sale purchaser must be classified as a small business operator and the estimated road construction costs in the timber sale contract must exceed $20,000. The PEP is available to all locations in the National Forest System except the State of Alaska. The authority cited in 16 U.S.C. 472a(i) makes funds available from timber receipts.

Roads are built by contractors who are awarded competitively bid public works road contracts.

Increases or decreases in road miles constructed through the PEP are offset by decreases or increases in the purchaser credit program (PCP). Costs differ between purchaser credit and purchaser election funds only by the Davis-Bacon minimum wage rate requirements included in competitively bid construction contracts funded by PEP.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Timber roads, purchaser elections, Forest Service (PEP)	$	0	4,859	+4,859
	FTE	0	3	+3

The estimated expenditure of $4,859,000 is based on field estimates of fund level. 176 miles of roads are estimated to be constructed with this spending level.

Object class information

Salaries and benefits	+78
Other services	+746
Supplies, materials, and equipment	+35
Land and structures	+4,000
Total	+4,859

Timber Salvage Sales

Objective To salvage insect infested, dead, damaged, or down timber, and to remove associated trees for stand improvement.

Program description This program is part of the timber sales program. A separate permanent appropriation for timber salvage was established by the National Forest Management Act of 1976, 16 U.S.C. 472a(h). Receipts from timber salvage sales are deposited in this account and used to prepare and administer future salvage sales.

Separate appropriations of $3,000,000 each, in FY 1977 and FY 1979, were used as "seed money" to accelerate the establishment of Timber Salvage Sales as a self-sustaining permanent appropriation. In FY 1988, Congress appropriated an additional $37,000,000 in seed money.

In FY 1989, Congress expanded the authority to use these funds for the preparation of new sales as a result of fires and other causes, and directed, as it did in FY 1988, that the salvage sale funds collected be included in the calculation of the 25 percent payments to local governments. A total of $59,997,000 is authorized for expenditure in FY 1990. Language was also included in the FY 1990 Appropriation Bill to use these funds for the preparation of timber damaged by Hurricane Hugo. Some of the sales prepared with these funds are set aside for preferential award to small business firms with 25 or fewer employees.

Total timber salvage program funded by NFS and Timber Salvage Sales funds is:

	FY 1989 Final	FY 1990 Estimate	FY 1991 Estimate
	(Million board feet)		
NFS salvage volume from sale administration and management	133	800	800
Timber salvage sales volume	1,771	904	936
Total salvage volume	1,904	1,704	1,736

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Timber salvage sales.........$	62,792	32,914	-29,878
FTE	1,412	520	-892

A $29,878,000 decrease is proposed from the 1991 base.

The FY 1990 program included $30,000,000 to replace volume lost from the pipeline due to fires, litigation, and appeals.

This FY 1991 program provides for the sales preparation work necessary to prepare and offer 936 MMBF of salvage sale volume. This is an increase of 19 MMBF from the 1991 base of 917 MMBF. These funds provide for sales preparation activities and for the full administration of salvage sales made in previous years.

Object class information

Salaries and benefits..................	-22,047
Travel..................................	-465
Transportation of things................	-281
Rent, communications, and utilities.......	-1,354
Other services..........................	-3,668
Supplies, materials, and equipment........	-1,916
Printing and reproduction...............	-85
Land and structures.....................	-62
Total.............................	-29,878

Tongass Timber Supply Fund

Objective

To provide for the protection, management, and utilization of all the resources of the Tongass National Forest, while maintaining an available timber supply from the Tongass National Forest at a rate of 4.5 billion board feet per decade as provided by 16 U.S.C. 539d.

Program description

The budget for the Tongass National Forest consists of funds annually appropriated to the Forest Service under the National Forest System and Construction appropriations and through Permanent Appropriations and Trust Funds. A majority of the funding available to the Tongass National Forest is derived from receipts collected by the Secretaries of the Interior and Agriculture and provided through the Tongass Timber Supply Fund (TTSF), a permanent indefinite appropriation.

For FY 1990, Congress combined all funding for the Tongass National Forest, except trust and other permanent appropriations, into the Tongass Timber Supply Fund, and limited spending to $52,441,000.

The Forest Service recognizes the importance of natural resource based industries to a well rounded economy in Southeast Alaska. Currently, the major natural resource dependent industries are timber, fishing, tourism and recreation. Mining is a smaller, but growing industry.

The Forest Service fisheries program is designed to maintain and enhance the productivity of the fisheries resource. The Tongass National Forest fisheries program has contributed to future salmon stocks by completing 94 major fisheries enhancement projects since 1980 that will increase salmon stocks by over 10 million pounds annually. The Forest Service has worked cooperatively with the Alaska Department of Fish and Game, the Fish and Wildlife Service, the National Marine Fisheries Service, and the Regional Aquaculture Association to complete research and develop management policies and practices that will allow the forest to reach its fisheries potential while continuing other resource management activities.

Recreation and tourism have steadily grown in southeast Alaska due to the spectacular beauty and unique natural characteristics which have been successfully marketed by the Alaskan tourism industry. Tourism, much of which is related in some way to the Tongass National Forest, has grown to over 400,000 annual visits. Outfitting and guide permits issued to businesses are directly dependent on the Tongass National Forest for their operations. Resident Alaskans make up a large percentage of the national forest users, with fishing, hunting and touring for pleasure increasing their quality of life. The Tongass National Forest program is designed to encourage commercial recreation and tourism growth and to maintain and expand the forest's public recreation and wilderness management programs.

Special funding for the TTSF program was created as a result of congressional intent to designate wilderness areas and provide for other resources while supplying timber to the existing timber industry. The designated timber supply is sufficient to maintain the industry's timber harvest level at a rate similar to the mid- to late 1970s, the time immediately preceding the passage of the Alaska National Interest Lands Conservation Act (ANILCA).

The quality, reproductive capability, and economic potential of the timber resource has been recognized since the Tongass National Forest was established in 1907. An active timber industry would provide a stabilizing effect on the region's boom or bust economy by providing year-round employment to local residents. As early as the 1920s, the Forest Service and the Territorial Government worked together in an effort to stabilize the economic base of southeast Alaska through the development of a timber industry. In 1927, the Secretary of Agriculture promulgated regulations requiring primary manufacture of all national forest timber before it could be exported from the territory of Alaska. In 1947, the Tongass Timber Act was enacted which enabled the Forest Service to sell timber within the Tongass National Forest. This Act enabled the Forest Service to establish long term timber sales in Alaska. The long term nature of the contracts assured that adequate consideration was given to the relatively high development costs, distance to domestic markets, and the large amount of lower quality timber in the stands of the Tongass.

Making the best use of the timber on the Tongass National Forest required having suitable markets for both high and low quality timber. High quality Sitka spruce had established uses in aircraft, furniture and boat construction. Hemlock and low quality Sitka spruce, however, did not have identified preferred uses. Since most of the forest of southeast Alaska contains significant amounts of low quality timber, any proposed industry had to be able to use the approximately 50 percent of the products that could not be made into marketable sawn products.

Based on the technologies available in the 1950s, pulp was considered to be an ideal product to be manufactured from lower valued material. The identified markets were located on the East Coast and in the Pacific Rim which had exhausted their local timber supplies during World War II. Today, about 50-65 percent of the pulp and over 90 percent of the lumber produced from the Tongass National Forest is exported to the Pacific Rim, primarily Japan. This export of timber is a positive transaction in the Nation's balance of trade with the Pacific Rim countries.

During the 1970s the Forest Service, in cooperation with the State of Alaska and the Small Business Administration, worked to enhance the competitive position of those timber operators not tied to the long term contracts. The short term segment of the timber industry was to be provided the opportunity to purchase a substantial portion of the remaining available volume from the forest not committed to the long term sales. Today the short term sales program makes up approximately one-third of the volume harvested from the Tongass National Forest.

Prices paid (stumpage rates) on the short term contracts are established by competitive bidding when the sale is sold. Due to severe timber market declines in the early 1980s, Congress enacted the Timber Contract Payment Modification Act in 1984. One provision of the Act provided special, one time emergency rate redeterminations for qualifying short term sale operators in Alaska for all volume scaled prior to October 15, 1989. All new short term sales advertised between July 31, 1985 and October 15, 1989, have incorporated the emergency rate redeterminations.

The long term stumpage rates are reviewed and new rates reflecting current market values are established every 5 years. Rates can either increase or decrease, but cannot decrease to less than the rates established as the minimum acceptable bid at the time the sale was sold. An emergency rate redetermination provision is standard for all Forest Service timber sale contracts over 7 years in duration. Under this provision, and after a scheduled rate redetermination, operators can request emergency rate redeterminations if changes in market conditions indicate a substantially lower market value for products under contract. A rate escalation provision to reflect increases in the timber market prices during an operating period has been negotiated for one long term sale. A similar provision is under discussion for the other long term sale.

The Forest Service goal for the Tongass National Forest is to prepare sufficient volume for offer or release consistent with timber demand. This is accomplished by preparing timber volumes at the level needed to replace previous volumes sold to short term purchasers and harvested on the long term sales. To ensure a continuous supply of timber available for harvest, the Forest Service attempts to have 1.5 to 2 years of volume fully prepared and available for sale or release at the beginning of the fiscal year. Consistent with this objective is the Forest Service policy to maintain 2 to 3 years equivalent of unharvested volume under contract with short term purchasers and/or released on the long term contracts. For out-year budgeting purposes, harvest level projections are based on past harvest and market trends for Tongass National Forest timber.

Harvest level projections in FY 1990, on the Tongass National forest, are projected to be 400 MMBF, with the short term operators projected to harvest approximately 125 MMBF. Based on these projections and assuming that approximately 100 MMBF will be sold to short term purchasers in FY 1990, there will be approximately 377 MMBF in short term sales unharvested under contract. This represents about 3+ years of unharvested volume under contract, which is higher than normally desired. Although the total unharvested volume under contract is higher than warranted by harvest/demand, that portion under contract to the most active purchasers is relatively low at this time.

FY 1990 harvest projections on the long term contracts is projected at 275 MMBF. The volume planned for release in FY 1990 is 240 MMBF. Based on these projections, there will be approximately 310 MMBF of unharvested volume remaining for the long term operators at the end of FY 1990. This represents less than 2 years volume released and available for harvest on the long term sales.

Decrease for 1991

		1991 Base	1991 Estimate	Decrease
		(Dollars in thousands)		
Tongass Timber Supply Fund	$	54,727	43,887	-10,840
	FTE	430	376	-54

A decrease of $10,840,000 is proposed from the 1991 base.

The Tongass will offer a total of 351 MMBF — 343 MMBF from Tongass Timber Supply Fund and 8 MMBF from Salvage Sale funds.

See Exhibits 1 through 3 which further describe the total Tongass National Forest program.

Object class information

Salaries and benefits	-2,052
Travel	-855
Transportation of things	-13
Rent, communications, and utilities	-63
Other services	-6,291
Supplies, materials, and equipment	-786
Printing and reproduction	-85
Total	-10,840

Exhibit 1

Tongass National Forest Total Program
(Tongass Timber Supply Fund)

	1989 Approp.	1990 Approp. Enacted to date	1991 Estimate
	(Dollars in thousands)		
Timber Program:			
Research $	1,800	1,800	1,832
Timber Resource Planning and Inventory $	3,548	3,801	4,182
Supplemental NEPA Analysis $	(660)	(0)	(0)
Timber Sale Preparation $	2,217	2,350	2,603
Short - term Sales $	(844)	(747)	(777)
Total Volume MMBF	(115)	(115)	(115)
Net Sawlog Volume MMBF	(100)	(100)	(100)
Long - term Sales $	(1,373)	(1,603)	(1,826)
Total Volume MMBF	(242)	(276)	(279)
Net Sawlog Volume MMBF	(200)	(240)	(243)
Timber Sales Administration $	3,520	3,994	4,294
Short - term Sales $	(1,188)	(1,248)	(1,339)
Total Volume MMBF	(138)	(144)	(144)
Net Sawlog Volume MMBF	(120)	(125)	(125)
Long - term Sales $	(2,332)	(2,746)	(2,955)
Total Volume MMBF	(302)	(316)	(316)
Net Sawlog Volume MMBF	(250)	(275)	(275)
Timber Support $	1,345	1,600	1,780
Total, Timber Program $	12,430	13,545	14,691
Reforestation and Timber Stand Improvement:			
Reforestation $	35	0	0
Acres	(0)	(0)	(0)
Timber Stand Improvement $	930	920	2,600
Acres	(1,060)	(2,000)	(6,300)
Total, Reforestation and TSI $	965	920	2,600

Exhibit 1
(Continued)

Tongass National Forest Total Program
(Tongass Timber Supply Fund)

		1989 Approp.	1990 Approp. Enacted to date	1991 Estimate
		(Dollars in thousands)		
Construction:				
Facilities Construction	$	0	0	0
Roads and bridges constructed by PCP:				
Construction	$	(6.297)	(14.831)	(14.155)
	Miles	(76.0)	(101.7)	(97)
Reconstruction	$	(548)	(1.134)	(3.956)
	Miles	(24.0)	(24.0)	(33)
Subtotal, Roads and bridges		(6.845)	(15.965)	(18.111)
Support to PCP:				
Administration and Support	$	1,900	1,800	1,705
Preconstruction engineering	$	2.902	1,888	1,795
Construction engineering	$	750	1,128	1,085
Augmentation	$	900	1,696	1,546
Subtotal, Support to PCP	$	6.452	6,512	6,131
Roads and bridges constructed by the Forest Service:				
Administration and Support	$	1,332	2,113	1,970
Preconstruction engineering	$	1,154	1,778	1,705
Construction engineering	$	296	725	730
Construction	$	3,162	1,115	5,250
	Miles	(12.7)	(3.5)	(21.3)
Reconstruction	$	868	2,350	1,552
	Miles	(6.6)	(2.9)	(0.0)
Subtotal, Roads and bridges	$	6.812	8,081	11,207
Total, Construction	$	13.264	14.593	17.338
Log Transfer Site	$	1.470	1.725	1.445
Tongass Plan Revision	$	1.755	897	1.098
General Administration	$	6.115	6.195	6.715
Total, Tongass Timber Supply Fund	$	35.999	37.875	43.887

1/ Does not include Log Transfer Sites and bridges.

Exhibit 2

Tongass National Forest Program
(Other than Tongass Timber Supply)

		1989 Approp.	1990 Approp Enacted to date	1991 Estimate
			(Dollars in thousands)	
National Forest System				
Minerals Management	$	807	807	783
Cases		(378)	(500)	(430)
Real Estate Management	$	277	234	360
Land Line Location	$	472	494	268
Miles		(25)	(40)	(18)
Maintenance of Facilities	$	370	370	532
Fire Protection	$	188	0 1/	0 1/
Cooperative Law Enforcement	$	25	25	59
Forest Road Maintenance	$	1,030	1,030	1,319
Miles		(2,625)	(2,625)	(2,655)
Forest Trail Maintenance	$	728	728	363
Miles		(590)	(370)	(330)
Timber Sale Administration and Management	$	69	69	60
Reforestation and TSI	$	42	42	0
Reforestation Acres		(50)	(100)	(0)
TSI Acres		(0)	(200)	(0)
Recreation Use	$	3,567	3,522	4,658
PAOT Days		(670,562)	(702,000)	(800,000)
Wilderness MM Acres		(5.5)	(5.5)	(5.5)
Cultural Resource Inventory Acres		(5,500)	(4,800)	(5,000)
Wildlife and Fish	$	3,506	3,500	6,050
Wildlife Habitat Imp. Acres		(500)	(300)	(400)
Structures		(30)	(0)	(60)
Inland Fish Habitat Imp. Acres		(50)	(0)	(60)
Structures		(0)	(0)	(0)
Anadromous Fish Habitat Acres		(550)	(900)	(1,500)
Structures		(22)	(20)	(40)
Soil, Water, and Air Management	$	1,861	1,855	1,800
Resource Improvement Acres		(40)	(20)	(40)
Resource Inventory M/Acres		(0)	(0)	(0)
General Administration	$	1,485	1,321	1,374
Total, National Forest System	$	14,427	13,997	17,626

1/ Firefighting fund appropriated for FY 1990 and FY 1991.

Exhibit 3
(Continued)

Tongass National Forest Program
(Other than Tongass Timber Supply)

		1989 Approp.	1990 Approp Enacted to date	1991 Estimate
			(Dollars in thousands)	
Construction:				
Forest Road Construction	$	165	80	221
Recreation Construction	$	429	89	545
Construction, FA&O	$	0	0	0
Forest Trail Construction	$	640	400	440
	Miles	(22.3)	(2.0)	(8.0)
Total, Construction	$	1,234	569	1,206
Total, Tongass Timber Supply Fund.	$	0	52,441	0 1/
Other appropriations:				
Trust Funds	$	2,332	2,572	3,910
Brush Disposal	$	85	93	90
Timber Salvage	$	133	640	371
Land Acquisition	$	0	25	25
Firefighting	$	0	156 2/	159 2/
Operation and Maintenance of Recreation Facilities	$	0	0	(2,515) 3/
Resource Management, Timber Receipts	$	568 4/	0	0
Total, Other	$	3,118	3,486	4,555
TOTAL, TONGASS NATIONAL FOREST (All Funds)	$	54,778	55,927	67,274

1/ The FY 1990 appropriations bill combined all funding for the Tongass Timber Supply Fund, except trust and other permanent appropriations into the Tongass Timber Supply Fund. Those funds have been shown in the NFS table for direct comparison.

2/ Firefighting fund appropriated for FY 1990 and FY 1991.

3/ Amount shown included in recreation use in NFS.

4/ The FY 1989 amounts are included for timber sale administration and management, engineering, and other timber support. Excess timber receipts were not realized in FY 1990.

Exhibit 3

Tongass Road Construction/Reconstruction Summary

		1989 Actual	1989 Approp.	1990 Approp. Enacted to date	1991 Estimate	Inc. (+) or Dec. (-) from 1990
Purchaser Construction						
Construction	Miles	103	76	102	97	-5
Reconstruction	Miles	46	24	24	33	+9
Subtotal	Miles	149	100	126	130	+4
Forest Service Construction						
Construction	Miles	3	13	4	21	+17
Reconstruction	Miles	5	7	3	0	-3
Subtotal	Miles	8	20	7	21	+14
TOTAL						
Construction	Miles	106	89	106	118	+12
Reconstruction	Miles	51	31	27	33	+6
TOTAL	Miles	157	120	133	151	+18

Roads and Trails for States, National Forests Fund

Objective	To offset appropriations for road and trail construction.
Program description	Under the Act of March 4, 1913 (16 U.S.C. 501), 10 percent of national forest receipts are made available to build and maintain roads and trails within the national forests in the States where the receipts were collected. This permanent appropriation has been transferred to the General Fund since 1982 to offset construction appropriations. The amounts shown in the table at the beginning of this section are actual transfers made in 1989 and 1990. In FY 1991, as part of the recreation fee legislation, this authority is proposed for repeal.

Operation and Maintenance of Quarters

Objective To operate and maintain employee quarters.

Program description Under authority of P.L. 98-473, as amended (5 U.S.C. 5911 note), a permanent fund was established for deposit of Forest Service employee payroll deductions for quarters rental. Funds are used to operate and maintain employee quarters. These funds are in addition to the maintenance of facilities funds in the NFS appropriation.

These funds pay the prorata costs for maintenance and management of water, waste water disposal systems, and similar facilities in common with administrative use.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in Thousands)		
Operation and maintenance of quarters	$	5,770	5,888	+118
	FTE	85	85	0

An increase of $118,000 is proposed from the 1991 base.

This level is based on estimated receipts from employee quarters rental deductions in FY 1991. These funds will maintain an estimated 75 percent of the current housing, the balance of needs are deferred.

Object class information

Rent, communications, and utilities	+10
Other services	+59
Supplies, materials, and equipment	+49
Total	+118

FOREST SERVICE PERMANENT APPROPRIATION

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-9922-0-2-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct Program:			
	1. Expenses, brush disposal	57,347	126.442	61.186
	2. Licensee programs, Forest Service	-65	233	113
	3. Restoration of forest lands and improvements	72	207	100
	4. Timber purchaser roads constructed by Forest Service	3,029	9,539	4.616
	5. Timber salvage sales	61,090	115.350	56.772
	6. Tongass timber supply fund	1,735	52.441	25.377
10.00	Total obligations	123.208	304.212	148.164
	Financing:			
21.40	Unobligated balance available, start of year	-227,791	-261.031	-139.022
24.40	Unobligated balance available, end of year	261,031	139.022	139.022
39.00	Budget authority	156.448	182.203	148.164
	Budget authority			
	Current:			
40.00	Appropriation rescinded (unobligated balances) (P.L. 100-446)	-40.000	0	0
	Permanent:			
60.00	Buget authority (appropriation) (indefinite) (special fund)	196.446	182.203	148.164
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	123.207	304.212	148.164
72.40	Obligated balance, start of year	36.019	26.047	167.796
74.40	Obligated balance, end of year	-26.047	-167.796	-163.142
90.00	Outlays	133.179	162.463	152.818
	Distribution of budget authority by account:			
	Expenses, brush disposal	54.456	64.662	66.279
	Licensee programs, Forest Service	77	119	118
	Restoration of forest lands and improvements	122	106	107
	Timber purchaser roads constructed by Forest Service	9.837	4.878	4.859
	Timber salvage sales	131.956	59.997	32.914
	Tongass timber supply fund	0	52.441	43.887
	Recission	-40.000	0	0
	Distribution of outlays by account:			
	Expenses, brush disposal	55.266	60.626	65.996
	Licensee programs, Forest Service	-65	114	118
	Restoration of forest lands and improvements	61	101	107
	Timber purchaser roads constructed by Forest Service	3.211	6.427	4.846
	Timber salvage sales	58.643	62.860	35.029
	Tongass timber supply fund	16.063	32.335	46.722

PERMANENT APPROPRIATIONS

OBJECT CLASSIFICATION (in thousands of dollars)

	Identification code: 12-9922-0-2-302	1989 actual	1990 est.	1991 est.
	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	43,823	50,869	37,089
11.3	Other than full-time permanent	15,172	17,620	12,847
11.5	Other personnel compensation	6,710	7,780	5,668
11.8	Special personal services payments	20	0	0
11.9	Total personnel compensation	65,725	76,269	55,604
	Personnel benefits:			
12.1	Civilian	10,973	14.045	11.274
13.0	Benefits for former personnel	1.581	1,835	1,338
21.0	Travel and transportation of persons	2,845	22,403	4.975
22.0	Transportation of things	1.174	9.245	2,053
23.1	Rental payments to GSA	833	1,876	2.842
23.2	Rental payments to others	1,490	11,733	2.605
23.3	Communications, utilities, and miscellaneous charges	2,755	21,695	4,817
24.0	Printing and reproduction	376	2,961	657
25.0	Other services	19,730	18,313	34,502
26.0	Supplies and materials	4,967	39,114	8,685
31.0	Equipment	4,109	32,357	7.185
32.0	Land and structures	6,473	50,972	11,319
42.0	Insurance claims and indemnities	158	1,244	276
44.0	Refunds	19	150	32
99.9	Total obligations	123,208	304,212	148,164

PERSONNEL SUMMARY

Direct:			
Total number of full-time permanent positions	2,113	2,388	1,685
Total compensable workyears:			
Full-time equivalent employment	2,836	3,206	2,260
Full-time equivalent of overtime and holiday hours	243	275	194
Average GS grade	9.28	9.28	9.28
Average GS salary	$25,430	$26,117	$27,013
Average salary of ungraded positions	$27,652	$28,399	$29,373

OPERATIONS AND MAINTENANCE OF QUARTERS

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-5219-0-2-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	5,832	8,302	5,888
	Financing:			
21.40	Unobligated balance available, start of year	-2,717	-2,533	-1
24.40	Unobligated balance available, end of year	2,533	1	1
60.00	Budget authority (appropriation) (permanent, indefinite) (special fund)	5,648	5,770	5.888
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	5,832	8,302	5.888
72.40	Obligated balance, start of year	1.199	1,071	3.584
74.40	Obligated balance, end of year	-1,071	-3,584	-3,608
90.00	Outlays	5,960	5,789	5,864

OBJECT CLASSIFICATION (in thousands of dollars)

	Direct obligations:			
	Personnel compensation:			
11.1	Full-time permanent	1,497	1.556	1.609
11.3	Other than full-time permanent	447	465	480
11.5	Other personnel compensation	48	50	52
11.9	Total personnel compensation	1,992	2,071	2.141
	Personnel benefits:			
12.1	Civilian	449	515	586
13.0	Benefits for former personnel	18	19	20
21.0	Travel and transportation of persons	61	103	57
22.0	Transportation of things	31	52	29
23.1	Rental payments to GSA	12	9	9
23.2	Rental payments to others	38	64	35
23.3	Communications, utilities, and miscellaneous charges	350	592	326
24.0	Printing and reproduction	9	15	8
25.0	Other services	1.267	2.144	1.180
26.0	Supplies and materials	1.310	2.219	1.223
31.0	Equipment	178	301	166
32.0	Land and structures	98	166	91
41.0	Grants, subsidies, and contributions	9	15	8
44.0	Refunds	10	17	9
99.9	Total obligations	5,832	8,302	5.888

OPERATIONS AND MAINTENANCE OF QUARTERS

PERSONNEL SUMMARY

Identification code: 12-5219-0-2-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	63	63	63
Total compensable workyears:			
Full-time equivalent employment	84	85	85
Full-time equivalent of overtime and holiday hours	1	1	1
Average GS grade	9.27	9.27	9.27
Average GS salary	$25,148	$25,827	$26,713
Average salary of ungraded positions	$27,375	$28,114	$29,079

Forest
Service

Permanent Appropriations-- Payment Funds

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
	(Dollars in thousands)						
Payment to Minnesota							
Budget authority .... $	1,116	716	716	716	716	0	0
Payment .... $	(716)						
Payments to counties, National Grasslands							
Budget authority .... $	15,664	11,500	11,500	11,500	11,338	-162	-162
Payment .... $	(7,187)						0
Payments to States, National Forests Fund .... $ 1/							
Budget authority .... $	353,806	350,700	350,700	350,700	353,575	+2,875	+2,875
Payment .... $	(353,806)						
Total, Budget authority .... $ 2/	370,586	362,916	362,916	362,916	365,629	+2,713	+2,713

1/ In FYs 1989, 1990 and 1991, 25 percent of the timber salvage sale fund will be applied to Payments to States, National Forests Fund.

2/ In FYs 1990 and 1991, budget authority represents 25 percent of the anticipated receipts for those fiscal years, except for the payment to Minnesota which is based on appraised value.

Authorities

P.L. 60-136, Act of May 23, 1908, Department of Agriculture Appropriations Act, as amended (16 U.S.C. 500).
Payments to States, National Forest Fund.
Twenty-five percent of monies received; no expiration date.

P.L. 71-539, Shipstead-Nolan Act of July 10, 1930, as amended by P.L. 95-495 (16 U.S.C. 577g). Section 5.
Payment to Minnesota for land purchase in Superior National Forest.
Such sums from National Forest Fund equal to three-fourths of 1 percent of the fair appraised value of the lands; no expiration date.

P.L. 75-210, Bankhead-Jones Farm Tenant Act, July 22, 1937, as amended, (7 U.S.C 1012). Section 33.
Payments to counties where National Grasslands are located.
Such sums from receipts equal to 25 percent of net revenues; no expiration date.

Payments to Minnesota

Objective

To provide a special annual payment to the State of Minnesota for lands in the Boundary Waters Canoe Area in St. Louis, Cook, and Lake counties as specified by law.

Program description

At the close of each fiscal year, the State of Minnesota is paid 0.75 percent of the appraised value of certain Superior National Forest lands in the counties of Cook, Lake, and St. Louis, for distribution to these counties (16 U.S.C. 577g).

In FY 1989, the total paymen was $1,116,162, comprised of $179,037 paid in December 1988 and $937,125 in September 1989.

Payments to Counties, National Grasslands Fund

Objective

To provide an annual payment to the counties in which Title III, Bankhead-Jones Acquired Lands are located, for funding schools and roads.

Program description

Of the net revenues received for the use of Title III, Bankhead-Jones Farm Tenant Act lands, 25 percent is paid to the counties in which such lands are located, for school and road purposes (7 U.S.C. 1012).

In FY 1989, the total payment of $7,186,810 paid in March 1989 is based on 25 percent of calendar year 1988 receipts.

Payments to States, National Forests Fund

Objective

To provide an annual payment to the States from national forest receipts to be used for schools and roads.

Program description

With few exceptions, 25 percent of all monies received from the national forests during the fiscal year is paid to the States in which the forests are located, to benefit public schools and public roads in the county or counties within the national forests (16 U.S.C. 500).

The National Forest Management Act of 1976 (P.L. 94-588, October 22, 1976) expanded the term "monies received" to include all collections from sale area improvement activities plus "all amounts earned or allowed any purchaser of National Forest timber and other forest products within such State......for construction of roads." The amount of this appropriation varies in direct proportion to national forest receipts, sale area improvement collections, and timber purchaser construction during the previous fiscal year.

Legislation enacted in the FY 1990 Appropriations Act (P.L. 101-121, October 13, 1989) provides for moneys received from the timber salvage sales program in fiscal year 1990 to be included in the 25 percent payment to local governments.

In FY 1989, the total payment of 25 percent of receipts to States for the National Forests Fund is $353,805,986, comprised of $105,760,359 paid in December 1988, $300,000 in June 1989, and $247,745,627 in September 1989 for 75 percent of estimated receipts in FY 1989.

FOREST SERVICE PERMANENT APPROPRIATIONS

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-9921-0-2-806	1989 actual	1990 est.	1991 est.
	Program by activities:			
	Direct Program:			
	1. Payment to Minnesota	1,116	737	716
	2. Payments to counties, National Grasslands	7,187	17,172	11,338
	3. Payments to States, National Forest fund	353,806	345,007	353,575
10.00	Total obligations (object class 41.0)	362,109	362,916	365,629
	Financing:			
21.40	Unobligated balance available, start of year	-1,526	-10,003	-10,003
24.40	Unobligated balance available, end of year	10,003	10,003	10,003
60.00	Budget authority (appropriation) (permanent, indefinite) (special fund)	370,586	362,916	365,629
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	362,109	362,916	365,629
72.40	Obligated balance, start of year	1	1	2,035
74.40	Obligated balance, end of year	-1	-2,035	-2,632
90.00	Outlays	362,109	360,882	365,032
	Distribution of budget authority by account:			
	Payments to Minnesota	1,116	716	716
	Payments to counties, National Grasslands	15,664	11,500	11,338
	Payments to States, National Forest fund	353,806	350,700	353,575
	Distribution of outlays by account:			
	Payments to Minnesota	1,116	716	716
	Payments to counties, National Grasslands	8,979	14,623	11,460
	Payments to States, National Forest fund	352,014	345,543	352,856

Forest
Service

Cooperative Work

	1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
			[Dollars in thousands]				
Cooperative work, Knutson-Vandenberg (KV)							
Reforestation .... $	113,787	152,033	152,033	158,737	143,556	-8,477	-15,181
Thousand acres	327.3	336.0	336.0	336.0	360.3	+24.3	+24.3
FTE	1,440	1,649	1,649	1,649	1,532	-117	-117
Timber stand improvement .... $	30,817	36,987	36,987	38,639	45,200	+8,213	+6,561
Thousand acres	146.1	178.0	178.0	178.0	195.7	+17.7	+17.7
FTE	390	432	432	432	459	+27	+27
Other .... $	92,452	61,802	61,802	64,705	74,289	+12,487	+9,584
FTE	1,060	928	928	928	1,103	+175	+175
Subtotal, KV .... $	237,056	250,822	250,822	262,081	263,045	+12,223	+964
FTE	2,890	3,009	3,009	3,009	3,094	+85	+85
Cooperative work -others .... $	57,208	64,295	64,295	67,005	66,457	+2,162	-548
FTE	901	910	910	910	920	+10	+10
Total, Cooperative work........ $	294,264	315,117	315,117	329,086	329,502	+14,385	+416
FTE	3,791	3,919	3,919	3,919	4,014	+95	+95

Appropriation Summary Statement

Funds received and deposited in trust from States, counties, timber sale operators, individuals, associations, and others are expended by the Forest Service as authorized by law and terms of the applicable trust agreements.

The work consists of cooperative work in the protection and improvement of the national forests, research investigations, reforestation and special cultural measures, and administration of private forest lands.

Authorities

Various Public Laws including the Act of June 30, 1914, Cooperative Funds Act, as amended; and 7 U.S.C. 2269; 16 U.S.C. 471h, 498, 572, 532--537, 672a, 693d, and 1643a.

Cooperative work (trust fund) for investigation, protection, and improvement of national forests.

No expiration date.

P.L. 71-319, Act of June 9, 1930, Knutson-Vandenberg Act, as amended (16 U.S.C. 576b). Section 3.

Funds deposited by timber sale purchasers to cover the cost of reforestation and special cultural measures to improve renewable resources on timber sale areas.

No expiration date.

Cooperative Work, Knutson-Vandenberg

General

Funds deposited by timber sale purchasers are used primarily to reforest areas cut over on timber sales and to improve the future productivity of timber stands by timber stand improvement practices. Work activities include site preparation, planting, fertilizing, precommercial thinning, release from competing vegetation, and pruning. Other resource activities for wildlife, range, and watershed are performed to maintain and improve productivity of renewable resources on sale areas that were impacted by logging activities. Accomplishments for this program are also reported under activities in the National Forest System appropriation.

Reforestation, K-V

Objective

To reforest timber sale areas.

Program description

The Knutson-Vandenberg Act (K-V), as amended, provides that part of timber sale receipts may be used for needed reforestation work on timber sale areas. Funds to accomplish this work are deposited into a trust fund.

About 75 percent of the total reforestation work will be funded from K-V in FY 1991. See Reforestation and Stand Improvement section under National Forest System.

Decrease for 1991

	1991 Base	1991 Estimate	Decrease
	(Dollars in thousands)		
Reforestation, K-V...... $	158,737	143,556	-15,181
FTE	1,649	1,532	-117

A decrease of $15,181,000 is proposed from the 1991 base.

The program level of $143,556,000 will provide the funding necessary to prepare sites and reforest 360,300 acres of national forest land, compared to 336,000 acres in the 1991 base.

The decrease of 24,300 acres from the 1991 base will provide for all of the current inventory increases so that the current total inventory will decrease by approximately 34,000 acres to 1,183,000 acres.

The reforestation program will provide for the treatment of 360,300 acres at a average unit cost of $398 per acre as compared to 336,000 acres in FY 1990 at a unit rate of $472 per acre. Much of the increase is due to regional variation in costs to treat regular harvested areas.

The decrease of 24,300 acres from the 1991 base will provide for all of the current inventory increases so that the current total inventory will decrease by approximately 34,000 acres to 1,183,000 acres.

The reforestation program will provide for the treatment of 360,300 acres at a average unit cost of $398 per acre as compared to 336,000 acres in FY 1990 at a unit rate of $472 per acre. Much of the increase is due to regional variation in costs to treat regular harvested areas.

Object class information

Salaries and benefits	-3,495
Travel	-179
Transportation of things	-105
Rent, communications, and utilities	-566
Other services	-5,934
Supplies, materials, and equipment	-4,143
Land and structures	-759
Total	-15,181

Timber Stand Improvement, K-V

Objective

To improve timber growth and product quality on timber sale areas by thinning and release treatments of the residual stands.

Program description

The Knutson-Vandenberg Act (K-V), as amended, provides that part of timber sale receipts may be used for timber stand improvement work. This work is financed from a trust fund similar to the financing for reforestation.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Timber stand improvement, K-V	$	38,639	45,200	+6,561
	FTE	432	459	+27

An increase of $45,200,000 is proposed from the 1991 base.

The program level of $6,561,000 will provide the funding necessary for the treatment of 195,700 acres of high priority timber stands that need either release or thinning.

The timber stand improvement program will provide for the treatment of 195,700 acres at a average unit cost of $231 per acre as compared to 178,000 acres in FY 1990 at a unit cost of $208 per acre.

The increase in costs is due primarily to more acres planned for treatment in those regions with higher costs per acre. Stand treatment in western regions, where herbicide use is limited, continues to require more expensive reliance on alternative methods of stand treatments (manual clearing, heavy equipment, and prescribed fire) to control competing vegetation.

Object class information

Salaries and benefits	+806
Travel	+49
Transportation of things	+8
Rent, communications, and utilities	+114
Other services	+5,093
Supplies, materials, and equipment	+417
Land and structures	+74
Total	+6,561

Other K-V

Objective

To protect and improve all other resource values on timber sale areas in conjunction with timber management activities.

Program description

The Knutson-Vandenberg Act (K-V), as amended, provides that part of timber sale receipts may be used to protect and improve the future productivity of renewable resources in timber sale areas. The work includes sale area improvements, maintenance and construction of soil and water protection measures, wildlife habitat improvements, and range management measures.

Timber sold since the K-V Act was amended (1976) is now being harvested, and collections for other resource work on timber sale areas have increased.

Increase for 1991

		1991 Base	1991 Estimate	Increase
		(Dollars in thousands)		
Other, K-V	$	64,705	74,289	+9,584
	FTE	928	1,103	+175

An increase of $9,584,000 is proposed from the 1991 base.

The program level of $74,289,000 will provide the funding necessary to improve the productivity of the land base for other resources. Emphasis will be on wildlife and fish habitat management, range enhancement, and soil, water, and air management.

Object class information

Salaries and benefits	+4,800
Travel	+403
Transportation of things	+96
Rent, communications, and utilities	+908
Other services	+2,396
Supplies, materials, and equipment	+918
Land and structures	+63
Total	+9,584

Cooperative Work, Other

Objective

To use deposits received from cooperators for protecting and improving resources of the National Forest System as authorized by trust agreements.

Program description

These deposits are used for the construction, reconstruction, and maintenance of roads, trails, and other improvements, and for scaling services, fire protection, and other resource purposes as authorized by law.

Cooperative road maintenance deposits are made by commercial users of the Forest Road System in lieu of actually performing their commensurate share of road maintenance. These deposits are used, in conjunction with the road maintenance appropriation, to provide maintenance of system roads by the Forest Service.

Deposits are received from State and other public agencies, industrial associations, and other private agencies to finance forestry research projects of mutual interest and benefit. The deposits may be made in a single sum or on a continuing basis, and may partially or wholly cover the research cost. Cooperative research projects may involve any aspect of forestry, and vary widely as to scope and duration.

Deposits for administering and protecting non-Federal land within or near the national forests are made by owners of non-Federal lands intermingled with, or adjacent to, national forests. These landowners want their lands managed according to good forest management practices, including reforestation.

Work done with deposits includes fire protection of private lands (usually in small tracts) intermingled with Federal ownership. This arrangement helps both parties since it is uneconomical for private landowners to set up fire control organizations, and because the Forest Service may need to suppress fires on adjoining ownerships to protect Federal land.

Activities include road maintenance associated with timber harvest, cooperative fire protection work with various States, and research efforts in conjunction with ongoing projects.

Decrease for 1991

	1991 Base	1991 Estimate	Increase
	(Dollars in thousands)		
Cooperative work, other	$ 67,005	66,457	-548
FTE	910	920	+10

A decrease of $548,000 is proposed from the 1991 base.

The program level of $66,457,000 will provide sufficient authorization to fund the work anticipated from cooperators who have funds deposited into national forest accounts.

Object class information

Salaries and benefits	-226
Travel	-4
Transportation of things	-16
Rent, communications, and utilities	-63
Other services	-201
Supplies, materials, and equipment	-20
Land and structures	-18
Total	-548

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Reforestation Trust Fund

		1989 Final	1990 Approp. Enacted to Date	1990 Estimate with DCA Reduction	1991 Base	1991 Estimate	Inc. (+) or Dec. (-) from 1990	Inc. (+) or Dec. (-) from Base
				(Dollars in thousands)				
Reforestation Trust Fund	$	31,171	30,000	30,000	30,000	30,000	0	0
	FTE	298	312	312	312	312	0	0

Appropriation Summary Statement

A trust fund was established for the accomplishment of reforestation and timber stand improvement activities, to use when appropriated funds do not meet total needs of fiscal year programs.

Authorities

P.L. 96-451, Act of October 14, 1980, as amended (16 U.S.C. 1606 a(d)), Section 303.

Establishment of Reforestation Trust Fund to be held by the Secretary of Treasury. Funds to be invested and provided to the Secretary of Agriculture based on an estimated fiscal year need necessary to accomplish the treatment of acreage in the reforestation program. (05-96) 20-8046-0-7-302 SENR HWME HMMF Such sums are necessary, but not more than $30 million annually, from custom tariffs; no expiration date.

Objective

To prevent a backlog in reforestation and timber stand improvement work.

Program description

Funds are to be used to accomplish the reforestation and timber stand improvement program, as described in the reforestation and stand improvement section of the National Forest System appropriation.

In FY 1991, $30,000,000 of these funds will be needed to do the planned reforestation and timber stand improvement work. Funds are transferred by the U.S. Treasury to the Forest Service to cover expenditures as they occur.

No change for 1991

COOPERATIVE WORK TRUST FUND

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-8028-0-7-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	462,490	559.596	326.551
	Financing:			
11.00	Offsetting collections from: Federal funds	-250.000	-255.162	0
21.40	Unobligated balance available, start of year	-194.492	-276.265	-286.948
24.40	Unobligated balance available, end of year	276.266	286.948	289.899
60.00	Budget authority (appropriation) (permanent, indefinite)	294.264	315.117	329.502
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	212.490	304.434	326.551
72.40	Obligated balance, start of year	54.173	24.503	24.503
74.40	Obligated balance, end of year	-24.503	-24.503	-24.503
90.00	Outlays	242.160	304.434	326.551

OBJECT CLASSIFICATION (in thousands of dollars)

	Personnel compensation:			
11.1	Full-time permanent	60.754	64.501	68.332
11.3	Other than full-time permanent	20.114	21.355	22.623
11.5	Other personnel compensation	5.312	5.640	5.975
11.8	Special personal services payments	18	0	0
11.9	Total personnel compensation	86.198	91.496	96.930
	Personnel benefits:			
12.1	Civilian	14.511	16,989	19.816
13.0	Benefits for former personnel	1.324	1.406	1.490
21.0	Travel and transportation of persons	3.744	4.854	2.144
22.0	Transportation of things	1.847	2,395	1.058
23.1	Rental payments to GSA	1.237	964	951
23.2	Rental payments to others	1.833	2.377	1.050
23.3	Communications, utilities, and miscellaneous charges	5.168	6.700	2.960
24.0	Printing and reproduction	218	283	125
25.0	Other services	308.814	383.388	178.495
26.0	Supplies and materials	25.311	32.826	14.502
31.0	Equipment	4.618	5.977	2.610
32.0	Land and structures	7,250	9.400	4.152
41.0	Grants, subsides, and contributions	-35	-45	-20
42.0	Insurance claims and indemnities	114	148	65
44.0	Refunds	338	438	193
99.9	Total obligations	462.490	559.596	326.551

COOPERATIVE WORK TRUST FUND

PERSONNEL SUMMARY

Identification code: 12-8028-0-7-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	2,822	2,919	2,989
Total compensable workyears:			
Full-time equivalent employment	3,791	3,919	4,014
Full-time equivalent of overtime and holiday hours	190	196	201
Average GS grade	8.53	8.53	8.53
Average GS salary	$24,670	$25,336	$26,206
Average salary of ungraded positions	$27,208	$27,943	$28,902

REFORESTATION TRUST FUND

PROGRAM AND FINANCING (in thousands of dollars)

	Identification code: 12-8046-0-7-302	1989 actual	1990 est.	1991 est.
	Program by activities:			
10.00	Total obligations	27,723	29,581	30,000
	Financing:			
	Unobligated balance available, start of year:			
21.40	Treasury balance	-1,883	-3,686	-4,105
21.41	Par value	-1,955	-3,600	-3,600
	Unobligated balance available, end of year:			
24.40	Treasury balance	3,686	4,105	4,105
24.41	Par value	3,600	3,600	3,600
60.00	Budget authority (appropriation) (permanent, indefinite)	31,171	30,000	30,000
	Relation of obligations to outlays:			
71.00	Obligations incurred, net	27,723	29,581	30,000
72.40	Obligated balance, start of year	-3,320	-3,913	-3,602
74.40	Obligated balance, end of year	3,913	3,602	3,518
90.00	Outlays	28,316	29,270	29,916

OBJECT CLASSIFICATION (in thousands of dollars)

	Personnel compensation:			
11.1	Full-time permanent	4,712	5,665	5,859
11.3	Other than full-time permanent	1,526	1,320	1,365
11.5	Other personnel compensation	317	337	349
11.9	Total personnel compensation	6,555	7,322	7,573
	Personnel benefits:			
12.1	Civilian	1,349	1,447	1,530
13.0	Benefits for former personnel	187	197	204
21.0	Travel and transportation of persons	263	332	282
22.0	Transportation of things	114	143	122
23.1	Rental payments to GSA	199	155	153
23.2	Rental payments to others	102	129	110
23.3	Communications, utilities, and miscellaneous charges	254	321	273
24.0	Printing and reproduction	116	146	124
25.0	Other services	16,357	16,585	17,244
26.0	Supplies and materials	1,891	2,380	2,024
31.0	Equipment	339	428	364
32.0	Land and structures	-10	-13	-11
42.0	Insurance claims and indemnities	7	9	8
99.9	Total obligations	27,723	29,581	30,000

REFORESTATION TRUST FUND

PERSONNEL SUMMARY

Identification code: 12-8046-0-7-302	1989 actual	1990 est.	1991 est.
Direct:			
Total number of full-time permanent positions	219	232	232
Total compensable workyears:			
Full-time equivalent employment	296	312	312
Full-time equivalent of overtime and holiday hours	13	16	16
Average GS grade	9.18	9.18	9.18
Average GS salary	$24,534	$25,196	$26,061
Average salary of ungraded positions	$20,893	$21,457	$22,194

Human Resource Programs

Objective

To provide human and natural resource benefits by administering and hosting programs in work, training, and education for the unemployed, underemployed, elderly, young, and others with special needs.

Program Description

The Forest Service participates in cooperative employment programs such as those authorized by P.L. 97-300, the Job Training Partnership Act of 1982 (Job Corps and miscellaneous hosted programs); P.L 93-408, the Youth Conservation Corps; P.L. 89-73, the Older Americans Act, as amended; and P.L. 92-300, the Volunteers in the National Forest Act, as amended. About 100,940 people are expected to participate in Forest Service administered employment and volunteer programs during FY 1990.

Following is a brief description of Human Resource Programs (HRP) for FY 1989 through FY 1991.

- The Youth Conservation Corps. The Youth Conservation Corps (YCC) is a summer employment program for young men and women, ages 15 through 18, who work, learn, and earn together by accomplishing projects that further the development and conservation of the natural resources of the United States. This program is also discussed in the National Forest System appropriation.

In FY 1989, the Forest Service was directed to use not less than $1.0 million for high priority projects to be carried out by the YCC program. We spent $2.2 million on the program in FY 1989. The program served 1,276 young people, of which 18 percent were minorities and 43 percent were women. These participants accomplished 222 person-years of work valued at $2.4 million, with a return of $1.09 on every YCC invested dollar.

For FY 1990, about 1,340 young people are expected to participate in a $2.5 million program. Conservation work valued at about $2.6 million will be carried out.

A YCC program is not proposed for FY 1991.

YCC crew member breaks trail for handicapped picnic site, Uinta National Forest, Utah

- Job Corps. Through an Agreement with the Department of Labor, the Forest Service operates 18 Job Corps Civilian Conservation Centers (nine of which are coeducational) providing basic education and job training to disadvantaged youth. The main purpose of the Centers is to produce graduates who are able to find productive work, re-enter school, or join the military. Enrollees receive room, board, clothing, skills training, education, and a monthly allowance instead of wages.

During program year 1988 (July 1, 1988, to June 30, 1989), 8,499 young men and women participated in the program funded at $60.4 million. In addition to acquiring job skills, these Job Corps participants completed work valued at $17.9 million.

It is anticipated in program year 1989 (July 1, 1989, to June 30, 1990), about 9,350 young men and women will participate at a funding level of $59.4 million. The value of accomplished work is estimated to be $21.0 million.

In the 1990 program year (July 1, 1990, to June 30, 1991), we anticipate a $59.4 million Job Corps program. The expected value of work is $21.0 million.

- Senior Community Service Employment Program (SCSEP). The Forest Service, in cooperation with the Department of Labor, sponsors the Senior Community Service Employment Program as authorized under Title V of the Older Americans Act. The program has three fundamental purposes: community service, part-time employment and supplemental income, and training and transition of participants to the private sector labor market. The program employs economically disadvantaged persons age 55 and older and fosters a renewed sense of self-worth and community involvement.

In program year 1988, (July 1, 1988, to June 30, 1989) this program was funded at $22.2 million and employed 6,148 persons (23 percent minorities and 38 percent women). Participants completed 3,832 person-years of work valued at $34.7 million. The Government realized a return of $1.56 for each dollar invested.

The SCSEP program is funded at $22.9 million for program year 1989, (July 1, 1989 through June 30, 1990).

For the next three program years, the Forest Service SCSEP program is expected to realize some small increases.

Senior Enrollee explaining to a family what they may expect to see on a day's hike on the Nantahala National Forest, North Carolina.

- Volunteers in the National Forests. The Volunteers program provides assistance in natural resource protection and management programs at nominal costs. The program offers individuals the opportunity to contribute their services to assist in managing the Nation's natural resources.

The Touch America Program (TAP), a component of the volunteer program, offers individuals the opportunity to contribute their services to assist in managing the Nation's natural resources.

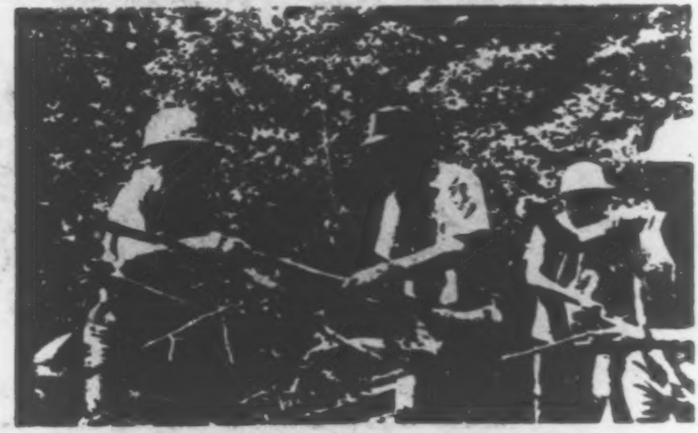
In FY 1989, 67,350 volunteers served in the Forest Service, including 5,303 TAP participants. The appraised value of work performed by volunteers was $29.0 million.

In FY 1990 and FY 1991, the Volunteers program will continue to receive strong emphasis. It is anticipated that there will be a participation of 71,000 volunteers in FY 1990 and 74,500 volunteers in FY 1991.

- Hosted programs. The Forest Service also serves as a host agency by providing work opportunities for programs administered by other governmental agencies and non-profit organizations. In FY 1989, 1,129 person-years of work were completed, valued at $14.6 million. There were 12,329 participants in these programs.

In FY 1990, about 12,950 people will participate in hosted programs doing conservation work valued at about $15.3 million.

In FY 1991, 13,598 people are expected to participate in this program.



Hosted program. Boy and Girl Scouts cleaning campground in preparation for summer season on the Pisgah National Forest, North Carolina.

- Take Pride in America (TPIA). Take Pride in America is a national public awareness campaign to encourage careful stewardship of the Nation's outstanding natural and cultural resources. The campaign is a partnership of Government at all levels, private organizations, and individual citizens who are committed to ensuring that America's lands, waters, and historic places are used wisely for the benefit of this and future generations. Through a national awards program, public service advertising, and other activities, TPIA seeks to instill a sense of ownership and responsibility for these resources which truly belong to all Americans. The Forest Service is one of the Federal sponsors of the TPIA campaign.

SUMMARY OF HUMAN RESOURCE PROGRAMS

FY 1989 and FY 1988 Actual

Activity		Program Funding	Value of Work Accomplished	Number of Participants	Percent Women	Percent Minority	Person Years Accomplished
		(Dollars in millions)					
Youth Conservation Corps	1/	Unfunded	$2.4	1,276	43	18	222
Job Corps	2/	$60.4	$17.9	8,469	12	46	3,250
Senior Community Service Employment Program	2/	$22.2	$34.7	6,148	38	23	2,832
Volunteers	3/	Unfunded	$29.0	67,384	29	7	2,225
Hosted Programs		Unfunded	$14.6	12,329	17	40	1,129
TOTAL		$82.6	$98.6	95,606	N/A	N/A	9,658

1/ Congressional earmark of not less than $1.0 million to be expended from benefiting program funds in National Forest System. We operated a $2.2 million program.

2/ Statistics for 1988 program year (July 1, 1988, through June 30, 1989).

3/ Includes youth participation in the Touch America Project.

SUMMARY OF HUMAN RESOURCE PROGRAMS

FY 1990 and FY 1989 Estimates

Activity		Program Funding	Value of Work Accomplished	Number of Participants	Percent Women	Percent Minority	Person Years Accomplished
		(Dollars in millions)					
Youth Conservation Corps	1/	Unfunded	$2.6	1,340	45	19	240
Job Corps	2/	$59.4	$21.0	9,350	18	60	3,866
Senior Community Service Employment Program	2/	$22.9	$35.0	6,300	45	23	2,900
Volunteers	3/	Unfunded	$30.5	71,000	30	10	2,400
Hosted Programs		Unfunded	$15.3	12,950	18	42	1,300
TOTAL		$82.3	$104.4	100,940	N/A	N/A	10,706

1/ Congressional earmark of not less than $1.0 million to be expended from benefiting program funds in National Forest System. We expect to operate a $2.5 million program.

2/ Statistics for 1990 program year (July 1, 1989, through June 30, 1990).

3/ Includes youth participation in the Touch America Project.

SUMMARY OF HUMAN RESOURCE PROGRAMS

FY 1991 and FY 1990 Estimates

Activity		Program Funding	Value of Work Accom- plished	Number of Participants	Percent		Person Years Accom- plished
					Women	Minority	
		(Dollars in millions)					
Youth Conservation Corps	1/	$ 0	$ 0	0	0	0	0
Job Corps	2/	$59.4	$21.0	9,350	15	50	3,866
Senior Community Service Employment Program	2/	$22.9	$35.0	6,300	45	23	2,900
Volunteers	3/	Unfunded	$32.0	74,500	31	11	2,500
Hosted Programs		Unfunded	$16.0	13,598	19	44	1,365
TOTAL		$82.3	$104.0	103,748	N/A	N/A	10,631

1/ A YCC program id not proposed for FY 1991.
program funds in National Forest System. We operated a $2.2 million program.

2/ Statistics for July 1, 1990, through June 30, 1991, are based on the 1990 program year level.

3/ Includes youth participation in the Touch America Project.

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Language Changes and Administative Provisions

No change in language:

FOREST RESEARCH

For necessary expenses of forest research as authorized by law, [$147,182,000] $148,672,000, to remain available until September 30, **[1991]** 1992.

Proposed change in language:

STATE AND PRIVATE FORESTRY

For necessary expenses of cooperating with, and providing technical and financial
assistance to States, Territories, possessions, and others; and for forest pest management
activities, **[$105,506,000]** $56,617,000, to remain available until expended, as authorized
1. by law: **[Provided, That a grant of $3,000,000 shall be made to the State of Minnesota**
2. **for the purposes authorized by section 6 of Public Law 95-495: Provided further,
That notwithstanding any other provision of law, a grant of $3,600,000 shall be
provided to the Washington State Parks and Recreation Commission for completion**
3. **of the Spokane River Centennial Trail: Provided further, that a grant of $6,000,000
shall be made to the National Arbor Day Foundation as matching grant for the
construction of the National Arbor Day Center in Nebraska City, Nebraska.]**

The first change removes provisions for a grant to the State of Minnesota under authority of section 6 of Public Law 95-495. The authority provided for in section 6 expired as of the end of fiscal year 1990.

The second change removes an amendment to the FY 1990 Appropriation Act providing for a grant to the Washington State Parks and Recreation Commission for completion of the Spokane River Centennial Trail.

The third change removes a one-time amendment to the FY 1990 Appropriation Act providing for a matching grant to the National Arbor Day Foundation for construction of the National Arbor Day Center in Nebraska City, Nebraska.

Proposed change in language:

NATIONAL FOREST SYSTEM

For necessary expenses of the Forest Service, not otherwise provided for, for management, protection, improvement, and utilization of the National Forest System, and for administrative expenses associated with the management of funds provided under the heads "Forest Research", "State and
1. Private Forestry", "National Forest System", "Construction", "Firefighting" and "Land Acquisition", **[$1,149,232,000] $**1,211,543,000 to remain available for obligation until
2. September 30, **[1991, and including 65 per centum of all monies received during the prior fiscal year as fees collected under the Land and Water Conservation Fund Act of 1965, as amended, in accordance with section 4 of the Act (16 U.S.C. 460l-6a(i)):]**
3. 1992: Provided, That **[appropriations in this account remaining unobligated]**
4. unobligated balances in the National Forest System account at the end of the fiscal year
5. **[1989, both annual and two-year funds, and]** 1990 which would otherwise be returned to the general fund of the Treasury, shall be merged with and made a part of the fiscal year
6. **[1990]** 1991 National Forest System appropriation, and shall remain available for
7. obligations until September 30, **[1991]** 1992.

The first change includes the appropriation "Firefighting" which until FY 1990 was identified as a line item in the National Forest System. This change will permit administrative expenses for "Firefighting" to be paid out of the National Forest System account.

The second change removes provision for appropriating 65 percent of monies received from the Land and Water Conservation Fund from the National Forest System appropriation. This provision is reflected in a new Operation and Maintenance of Recreation Facilities appropriation.

The third change updates the fiscal year reference for the availability of funds to 1992.

The fourth and fifth changes remove provision for merging both annual and two-year funds into the 1991 appropriation. There will be no annual funds to merge after fiscal year 1989.

The sixth change revises the year-end date for defering the unobligated balance.

The seventh change updates the time period in terms of fiscal years that these funds are available.

No change in language:

[FOREST SERVICE] FIREFIGHTING

1. For necessary expenses for **[forest fire suppression and presuppression]** firefighting on or adjacent to National Forest System lands or Department of the Interior lands, and for forest
2. fire **[protection and emergency forest fire rehabilitation of]** management and presuppresion; and emergency operations on National Forest System lands,
3. **[$561,139,000] $**297,849,000, to remain available until expended **[: Provided, That such funds are to be available for repayment of advances to other appropriation accounts**

4. **from which funds were previously transferred for such purposes.]**, of which
$179,189,000 shall be for fire management and presuppresision and $118,660,000 shall be
for emergency operations. (Department of the Interior and Related Agencies Appropriatons
Act, 1990.)

The first change provides a more descriptive subject matter for this appropriation.

The second change revises the appropriation language to make it agree with the activities used to describe the program.

The third change deletes a provision which is not in the budget plan for FY 1991.

The fourth change establishes the amounts for each activity within the appropriation.

Proposed change in language:

CONSTRUCTION

For necessary expenses of the Forest Service, not otherwise provided for, for construction.
1. **[$221,960,000]** $222,906,000, to remain available until expended, of which **[$38,993,000]**
2. $25,784,000 is for construction and acquisition of buildings and other facilities; and
3. **[$182,967,000]** $197,122,000 is for construction of forest roads and trails by the Forest
4. Service as authorized by 16 U.S.C. 532-538 and 23 U.S.C. 101 and 205 **[, of which
$1,500,000 shall be available for the Federal share of road reconstruction for the
purpose of improved access to the Monongahela National Forest, West Virginia, which
shall be matched on an equal basis by non-Federal participants]**: Provided, That funds
5. becoming available in fiscal year **[1990]** 1991 under the Act of March 4, 1913 (16 U.S.C.
501), shall be transferred to the General Fund of the Treasury of the United States
**[: Provided further, That not to exceed $112,000,000 to remain available until
expended, may be obligated for the construction of forest roads by timber purchasers]**.

The first change and second changes update the amount for construction and acquisition of buildings.

The third change updates the amount for construction of forest roads and trails.

The fourth change removes a one-time amendment to the FY 1990 Appropriation Act.

The fifth change updates the fiscal year reference for the availability of funds to FY 1991.

No change in language:

LAND ACQUISITION

For expenses necessary to carry out the provisions of the Land and Water Conservation Fund Act of 1965, as amended (16 U.S.C. 460l-4-11), including administrative expenses, and for acquisition of land or waters, or interest therein, in accordance with statutory authority applicable to the Forest Service, **[$63,433,000]** $63,486,000, to be derived from the Land and Water Conservation Fund, to remain available until expended.

Add the following provision:

OPERATION AND MAINTENANCE OF RECREATION FACILITIES

For operation, maintenance, and construction of recreation facilities, not to exceed $9,084,000 to be derived from the special fee account established pursuant to section 5201 of Public Law 100-203, to remain available until expended.

No change in language:

ACQUISITION OF LANDS FOR NATIONAL FORESTS

SPECIAL ACTS

For acquisition of lands within the exterior boundaries of the Cache, Uinta, and Wasatch National Forests, Utah; the Toiyabe National Forest, Nevada; and the Angeles, San Bernardino, Sequoia, and Cleveland National Forests, California, as authorized by law, [$1,068,000] $1,103,000, to be derived from forest receipts.

No change in language:

ACQUISITION OF LANDS TO COMPLETE LAND EXCHANGES

For acquisition of lands, to be derived from funds deposited by State, county, or municipal governments, public school districts, or other public school authorities pursuant to the Act of December 4, 1967, as amended (16 U.S.C. 484a), to remain available until expended.

No change in language:

RANG[illegible]ETTERMENT FUND

For necessary expenses of range rehabilitation, protection, and improvement, 50 per centum of all moneys received during the prior fiscal year, as fees for grazing domestic livestock on lands in National Forests in the sixteen Western States, pursuant to section 401(b)(1) of Public Law 94-579, as amended, to remain available until expended, of which not to exceed 6 per centum shall be available for administrative expenses associated with on-the-ground range rehabilitation, protection, and improvements.

No change in language:

GIFTS, DONATIONS AND BEQUESTS FOR FOREST AND RANGELAND RESEARCH

For expenses authorized by 16 U.S.C. 1643(b), **[$30,000]** $30,000 to remain available until expended, to be derived from the fund established pursuant to the above Act [**: Provided, That unexpended balances of amounts previously appropriated for this purpose under the heading "Miscellaneous trust funds, Forest Service" may be transferred to and merged with this appropriation for the same time period as originally enacted**].

This change removes a one-time amendment to the FY 1990 Appropriation Act.

ADMINISTRATIVE PROVISIONS, FOREST SERVICE

Amend the following provision:

> Appropriations to the Forest Service for the current fiscal year shall be available for: (a) purchase of not to exceed **[185]** 202 passenger motor vehicles of which **[11]** 27 will be used primarily for law enforcement purposes and of which **[169]** 170 shall be for replacement only, of which acquisition of **[132]** 144 passenger motor vehicles shall be from excess sources, and hire of such vehicles; operation and maintenance of aircraft, the purchase of not to exceed two for replacement only, and acquisition of **[43]** 97 aircraft from excess sources; notwithstanding other provisions of law, existing aircraft being replaced may be sold, with proceeds derived or trade-in value used to offset the purchase price for the replacement aircraft; (b) services pursuant to the second sentence of section 706(a) of the Organic Act of 1944 (7 U.S.C. 2225), and not to exceed $100,000 for employment under 5 U.S.C. 3109; (c) uniform allowances for each uniformed employee of the Forest Service, not in excess of $400 annually; (d) purchase, erection, and alteration of buildings and other public improvements (7 U.S.C. 2250); (e) acquisition of land, waters, and interests therein, pursuant to the Act of August 3, 1956 (7 U.S.C. 428a); (f) for expenses pursuant to the Volunteers in the National Forest Act of 1972 (16 U.S.C. 558a, 558d, 558 a note); and (g) for debt collection contracts in accordance with 31 U.S.C. 3718(c).

Delete the following provision:

> **[None of the funds made available under this Act shall be obligated or expended to change the boundaries of any region, to abolish any region, to move or close any regional office for research, State and Private Forestry, or National Forest System administration of the Forest Service, Department of Agriculture, without the consent of the House and Senate Committees on Appropriations and the Committee on Agriculture, Nutrition, and Forestry in the United States Senate and the Committee on Agriculture in the United States House of Representatives.]**

This change removes language that restricts the flexibility needed to make changes to improve organizational effectiveness and efficiency and reduce general administration costs. The Forest Service will continue to consult with the Appropriations Committees, Committees on Agriculture, Nutrition, and Forestry, and individual members of Congress concerned, prior to effecting any such change.

Proposed change in language:

> Any appropriations or funds available to the Forest Service may be advanced to the Forest Service Firefighting appropriation and may be used for forest firefighting and the emergency rehabilitation of burned-over lands under its jurisdiction.

This change will continue our authority to advance funds to the Forest Service Firefighting appropriation for emergency firefighting and rehabilitation as authorized by 16 U.S.C. 556d. This is in lieu of the present language which allows the Forest Service to charge emergency firefighting and rehabilitation expenses direct to other Forest Service appropriations.

Delete the following provision:

> **[The appropriation structure for the Forest Service may not be altered without advance approval of the House and Senate Committees on Appropriations.]**

This change removes the legal requirement that the Forest Service consult with the House and Senate Committees on Appropriations before changing the appropriation structure. The Forest Service will continue to consult with the Committees before implementing any changes.

No change in language:

> Notwithstanding any other provision of law, any appropriations or funds available to the Forest Service may be used to reimburse employees for the cost of State licenses and certification fees pursuant to their Forest Service position and that are necessary to comply with State laws, regulations, and requirements.

No change in language:

> Funds appropriated to the Forest Service shall be available for assistance to or through the Agency for International Development and the Office of International Cooperation and Development in connection with forest and rangeland research, technical information, and assistance in foreign countries, and shall be available to support forestry and related natural resource activities outside the United States and its territories and possessions, including technical assistance, education and training, and cooperation with United States and international organizations.

Proposed change in language:

1. **[Funds previously appropriated]** All funds received for timber salvage sales may be
2. **[recovered from receipts deposited for use by the applicable national forest and]**
credited to the Forest Service Permanent Appropriations to be expended for timber salvage
sales from any national forest, and for timber sales preparation to replace sales lost to fire
or other causes, and sales preparation to replace sales inventory on the shelf for any
national forest to a level sufficient to maintain new sales availability equal to a rolling five-
year average of the total sales offerings, and for design, engineering, and supervision of
construction of roads lost to fire or other causes associated with the timber sales programs
described above: Provided, That notwithstanding any other provision of law, moneys
3. received from the timber salvage sales program in fiscal year **[1990]** 1991 shall be
considered as money received for purposes of computing and distributing 25 per centum
4. payments to local governments under 16 U.S.C. 500, as amended **[: Provided further, That amounts necessary shall be available from deposits into the salvage sale fund for salvage of timber damaged by Hurricane Hugo to the maximum extent possible without regard to the geographic origin of the funds].**

The first and second changes provide the Forest Service the flexibility to move any Salvage Sale collections from one National Forest to another, as needed. The National Forest Management Act of 1976, 16 U.S.C. 1600, the Act which established the salvage sale program, restricted the use of collections to the national forest which generated the revenue. Current appropriation language authorizes only funds appropriated by Congress that were merged with the Salvage Sales permanent appropriation to be recovered from receipts and used on any national forest.

The third change updates the fiscal year reference to FY 1991.

The fourth change removes a one-time amendment to the FY 1990 Appropriation Act. Timber damaged by the Hurricane Hugo should be salvaged by FY 1991. It would be replaced by general authority to use salvage receipts where needed.
Delete the following provision:

> **[None of the funds made available to the Forest Service under this Act shall be subject to transfer under the provisions of section 702(b) of the Department of Agriculture Organic Act of 1944 (7 U.S.C. 2257) or 7 U.S.C. 147b unless the proposed transfer is approved in advance by the House and Senate Committees on Appropriations in compliance with the reprogramming procedures contained in House Report 99-714.]**

This change will enable the Forest Service to respond to unforeseen events that necessitate immediate action. We will continue to follow the Committee's guidelines for the reprogramming of funds.

No change in language:

> No funds appropriated to the Forest Service shall be transferred to the Working Capital Fund of the Department of Agriculture without the approval of the Chief of the Forest Service.

No change in language:

> Notwithstanding any other provision of law, any appropriations or funds available to the Forest Service may be used to provide nonmonetary awards of nominal value to private individuals and organizations that make contributions to Forest Service programs.

Delete the following provision:

> **[Funds available to the Forest Service shall be available to conduct a program of not less than $1,000,000 for high priority projects within the scope of the approved budget which shall be carried out by the Youth Conservation Corps as if authorized by the Act of August 13, 1970, as amended by Public Law 93-408.]**

This change removes the language for the Youth Conservation Corps, which is not proposed for fiscal year 1991.

No change in language:

Notwithstanding the provisions of the Federal Grant and Cooperative Agreements Act of 1977 (31 U.S.C. 6301-6308), the Forest Service is authorized to negotiate and enter into cooperative arrangements with public and private agencies, organizations, institutions, and individuals to continue the Challenge Cost-Share Program.

Delete the following provision:

[None of the funds made available to the Forest Service in this Act shall be expended for the purpose of issuing a special use authorization permitting land use and occupancy and surface disturbing activities for any project to be constructed on Lewis Fork Creek in Madera County, California, at the site above, and adjacent to, Corlieu Falls bordering the Lewis Fork Creek National Recreation Trail until the studies required in Public Law 100-202 have been submitted to the Congress: Provided, That any special use authorization shall not be executed prior to the expiration of thirty calendar days (not including any day in which either House of Congress is not in session because of adjournment of more than three calendar days to a day certain) from the receipt of the required studies by the Speaker of the House of Representatives and the President of the Senate.]

This change removes a one-time amendment to the FY 1990 Appropriation Act. The required studies are expected to be completed in FY 1990.

Delete the following provision:

[Notwithstanding any other provision of law, the Secretary of the Treasury is directed to make available to the Secretary of Agriculture, to remain available until expended, all National Forest Fund timber receipts received by the Treasury during fiscal year 1989 from the harvesting of National Forest Timber in excess of $920,000,000, the 1989 National Forest Fund timber receipts contained in the President's Budget proposal for fiscal year 1990: Provided, That such excess amount made available for the overall purposes of this section shall not exceed $65,000,000: Provided further, That an additional $32,000,000 shall not be subject to the per centum allocations of subsequent provisions of this section and shall be made separately available solely for implementation of the timber sales program included in this Act as described in the accompanying statement of the managers and shall be used solely for the necessary expenses of such timber sales program including, but not limited to, timber sales administration and management (including all timber support costs) and construction and design of roads: Provided further, That the $32,000,000 shall only be provided after all other sources of funds, appropriated and nonappropriated, have been utilized to the fullest extent possible: Provided further, That this estimate of 1989 receipts shall not be adjusted for the purposes of this section: Provided further, That such funds shall be made available during fiscal year 1990, and shall be in addition to any funds appropriated in this Act: Provided further, That this transaction will be made without reductions for payments to be made in accordance with the provisions of the Act of May 23, 1908, as amended (16 U.S.C. 500) or the

Act of July 10, 1930 (16 U.S.C. 577g): Provided further, That funds made available to the Secretary of Agriculture pursuant to this provision shall be used for the necessary expenses, including support costs of National Forest Systems programs as follows: 6 per centum for National Forest trail maintenance; 4 per centum for National Forest Trail construction; 20 per centum for wildlife and fish habitat management; 20 per centum for soil, water, and air management; 5 per centum for cultural resource management; 5 per centum for wilderness management; 10 per centum for reforestation and timber stand improvement; and 30 per centum for timber sales administration and management, including all timber support costs, for advanced preparation work for fiscal year 1991 and fiscal year 1992 timber sale offerings: Provided further, That not later than 30 days after the submission of the President's fiscal year 1991 budget, the Chief of Forest Service shall provide a report to the House and Senate Committees on Appropriations on the final amount and distribution of funds made available under this section, and shall include an assessment of National Forest resource outputs to be produced in fiscal year 1990, fiscal year 1991, and subsequent years, using funds made available under this section, and a comparison of the outputs achieved in fiscal year 1990 and proposed for fiscal year 1991, with the output levels for the program areas listed described in the Forest Service resource management plans in effect at the time of the report required by this section.]

This change removes a one-time amendment to the FY 1990 Appropriation Act for the use of excess timber sale receipts to provide funds to help restore the timber sales preparation program that had lost timber sales to fires and other causes. These excess receipts were also to be used until expended to enhance other specified resource areas in order to bring the accomplishments closer to the levels specified in the forest land and resource management plans. Deletion of this section will contribute to sounder financial planning by removing a highly speculative source of funding, i.e., excess timber receipts, and by restoring the discipline of the appropriation process to provide definite amounts for the operation of on-going programs.

No change in language:

Any money collected from the States for fire suppression assistance rendered by the Forest Service on non-Federal lands not in the vicinity of National Forest System lands shall be used to reimburse the applicable appropriation and shall remain available until expended as the Secretary may direct in conducting activities authorized by 16 U.S.C. 2101 (note), 2101-2110, 1606, and 2111.

Proposed change in language:

Of the funds available to the Forest Service, [$1,500] **$2,500** is available to the Chief of the Forest Service for official receptions and representation expenses.

This change is necessary as official activities and receptions for visiting delegations are continuing at an increased level. The increase is needed to meet unplanned, but essential, official functions that require the Chief's representation.

Delete the following language:

[Notwithstanding section 705(a) of the Alaska National Interest Lands Conservation Act (16 U.S.C 539d(a)),$52,441,000 shall be available for timber supply, protection and management, research, resource protection, and construction on the Tongass National Forest in fiscal year 1990: Provided, That all of the funds available from the Tongass Timber Supply Fund in fiscal year 1990 pursuant to section 705(a) of Public Law 96-487 shall be deemed obligated as of October 1, 1989 and shall remain available until expended: Provided further, That this funding limitation shall not include those funds available to the Forest Service as National Forest System (except for timber sales administration and management funds), Trust Funds, Permanent Funds (other than the Tongass Timber Supply Fund), Timber Receipts, or Purchaser Road Construction.]

This change removes a one-time amendment to the FY 1990 Appropriation Act.

Delete the following language:

[Notwithstanding any other provision of law, the Forest Service is directed to compensate Davis Sheep Company, Monteview, Idaho, for reasonable expenses incurred as a result of mortality of permitted animals and moving permitted animals from one location to another as directed by the Forest Service: Provided, That in no event should expenses be less than $85,000: Provided further, That up to an additional $27,500 is authorized if the Forest Service, in conjunction with Davis Sheep Company, determines additional losses were incurred: Provided further, That no funds provided in this title may be expanded by the Forest Service to implement a new fee schedule of increase the fees charged for communication site use of lands administered by the Forest Service above the levels in effect on January 1, 1989.]

This change removes a one-time authorization in the FY 1990 Appropriation Act.

Special Exhibits

Passenger-carrying Vehicles

The Forest Service is an agency that operates in remote sections of the country. Public transportation is not available in most locations. There are about 191 million acres within the National Forest System and about 726 million acres of State and private forest land within areas covered by cooperative forest programs.

The Forest Service fleet includes over 16,000 pieces of equipment, ranging from sedans and pickup trucks to bulldozers and motor graders. The Forest Service uses fleet management centers or commercial rental services to the fullest extent when it is cost effective.

Forest officers use passenger-carrying vehicles in protecting and managing the National Forest System lands, research, State and private forestry, and law enforcement activities.

Additions

The Forest Service proposes to purchase 32 additional passenger-carrying vehicles, of which eight are for law enforcement, to replace pickup and utility trucks and carryalls. Passenger-carrying vehicles are less costly to operate and maintain than trucks.

Replacements

The Forest Service proposes to replace 170 of the 1,252 passenger-carrying vehicles now in operation, that meet the requirements of having traveled more than 60,000 miles and/or being more than 6 years old.

Seven replacement law enforcement vehicles are requested for use by Forest Service criminal investigators. The Forest Service normally does not purchase high performance engines, but the remaining components of a type IV vehicle (suspension and cooling system for weight, electrical system for communications equipment, size and configuration for multipurpose uses) are needed to meet the needs of criminal investigators. Ordering these features separately would be more costly than ordering the "police special" vehicles with small engine options.

These type IV vehicles obtained through the General Services Administration (GSA) are necessary to:

- Provide an adequate electrical system for communications equipment to ensure responsiveness and employee safety.

- Provide a multiuse vehicle that will safely and efficiently haul 600 or more pounds of investigative equipment and simultaneously transport Federal suspects.
- Provide security (as compared with a utility vehicle) for expensive investigative equipment, such as radios and night viewing devices.
- Provide adequate separation between Federal prisoners and Federal officers, and provide a safe means of transporting prisoners.

Passenger-carrying vehicles

Age Data
(as of September 30, 1989)

Year	Number of Vehicles
1983	120
1984	95
1985	60
1986	151
1987	139
1988	160
1989	190
Total	915

Mileage Data
(as of September 30, 1988)

Miles	Number of Vehicles
60,000 and over	133
50,000 to 59,999	127
40,000 to 49,999	114
30,000 to 39,999	89
20,000 to 29,999	86
10,000 to 19,999	145
0 to 9,999	221
Total	915

Federal Excess Personal Property, Vehicles, and Aircraft

General

The Forest Service is authorized by 40 U.S.C. 483 to loan property, no longer required by Federal agencies, to States for rural and wildland fire protection. The States can use the property in their protection program or assign the loaned property to cooperating volunteer rural fire departments.

Property on loan to States is also replaced, when possible, with equipment excess to Federal agency needs.

Excess property is directed to areas with the highest potential to increase efficiency, based on an analysis of fire protection needs. Funding is not required to purchase property through this program.

Passenger-carrying Vehicles

For FY 1991, an estimated 144 passenger-carrying vehicles will be replaced or acquired.

The current fleet on loan to the States and territories is 288.

Aircraft

Aircraft replacement and acquisition estimates for loan to States and territories are:

15 single-engine reconnaissance aircraft
18 twin-engine reconnaissance and cargo aircraft
64 helicopters*

The current fleet on loan to States and territories is:

132 single-engine aircraft
41 twin-engine aircraft
45 helicopters

*Helicopter needs fluctuate as we attempt to anticipate the U.S. Army's modernization program and mass disposal of helicopters, which would permit a total upgrading of the State Forester's helicopter fleet. The helicopter modernization program has been delayed in FY 1989 and 1990 by Department of Defense budget restrictions.

Forest Service
Consolidated Schedule of Permanent Positions Paid From Funds Available to the Forest Service
Detail of Permanent Positions

	1989 Actual	1990 Estimate	1991 Estimate
ES-6	1	2	2
ES-5	9	8	8
ES-4	23	26	26
ES-3	21	22	21
ES-2	6	3	3
ES-1	1	0	0
Subtotal	61	61	60
GS-16	2	2	2
GS/GM-15	286	280	275
GS/GM-14	745	730	715
GS/GM-13	1,953	1,914	1,876
GS-12	3,193	3,129	3,067
GS-11	5,802	5,686	5,572
GS-10	137	134	132
GS-9	5,866	5,749	5,634
GS-8	509	499	489
GS-7	5,122	5,020	4,919
GS-6	2,219	2,175	2,131
GS-5	4,544	4,453	4,364
GS-4	2,505	2,455	2,406
GS-3	773	758	742
GS-2	86	84	82
GS-1	41	40	39
Subtotal	33,783	33,108	32,445
Positions at rates established by Acts of 6/20/58 and 9/23/59 5 U.S.C. 3104	2	2	2
Ungraded (wage rate) total permanent positions	1,551	1,520	1,490
Unfilled positions end of year	(1,999)	(1,959)	(1,920)
Total permanent employment end of year	35,397	34,691	33,997

Below-Cost Timber Sales Test

Purpose of the Test:
The President's Budget proposes a test to evaluate the implications of phasing out certain below-cost commercial timber sales on national forests and to determine whether the loss in local economic activity and payments to counties can be offset through expansion of recreation. The test will evaluate the effects on 12 National Forests (9 administrative units) beginning in FY 1991 under the guidelines described below.

The Budget eliminates additional investments in certain below-cost commercial timber sales on the test forests. Recreation opportunities will be expanded through additional investments, and special fee legislation will be requested to expand the authority to collect recreation fees. The results of the test will be used to help determine national policy on below-cost timber sales.

Test Units and Locations:

REGION	NATIONAL FOREST	STATE
Region 1	Beaverhead	Montana
Region 2	Arapaho and Roosevelt	Colorado
	Pike and San Isabel	Colorado
	White River	Colorado
Region 8	Chattahoochee	Georgia
	Cherokee	Tennessee
	George Washington	Virginia
Region 9	Wayne and Hoosier	Indiana/Ohio
	Shawnee	Illinois

Definition of Below-Cost Timber Sales:
For the purposes of this test, a "below-cost timber sale" is defined as a sale that is expected to return revenues from that sale (per MBF) that are less than the previous three-year average timber sale program total operation expense (per MBF) in the TSPIRS statement of revenues and expenses for that national forest. This analysis will be done on a sale-by-sale basis.

Timber Sale Guidelines:
The following types of timber sales will continue on test forests.

- Above-cost timber sales.

- Sales with lower than average costs when revenues can be anticipated to exceed these costs.

- Sales in the preparation "pipeline" where sale receipts are expected to equal or exceed the cost of additional Forest Service investments on the sale that would be incurred in FY 1991 and beyond.

- Sales for health and safety, and protection from fire, insects and disease, when one of the following conditions is met:
  - If not harvested the timber would pose insect, disease, or fire hazard to adjacent national forest or private land values, and an analysis indicates that the harvest is justified based upon the values that would be protected, the risks involved, and the economic losses that would be incurred in selling the sale.
  - If the area will be reforested and commercial sale and harvest will result in a reduction in the net cost to the Federal Government of site preparation and reforestation (sale receipts would be included in the net cost determinations).
- Firewood, Christmas trees, posts, poles, and other miscellaneous products traditionally made available to local people.
- Sales designed to achieve non-timber resource objectives, if paid for by the benefiting program; e.g., timber sales made for the purpose of improving wildlife habitat will be paid for with wildlife funds.

Offsetting Economic Impact with an Expanded Recreation Program: The FY 1991 Budget includes an additional $10 million to expand recreation activities for these 12 test forests to generate offsetting economic activities in terms of jobs, income generated, and revenue shared with the counties. The Forest Service will cooperate with State and local governments, local communities, the private sector, and other interested groups to determine how the additional funding can best be used to generate offsetting economic activities. To the extent practical, partnerships and challenge cost-sharing will be used to stretch Federal funding and to generate economic activities in the private sector.

Special Legislative Authority to Increase Recreation User Fees: Present recreation fee authority is very limited. For example, fees may only be charged at campgrounds with certain specified facilities even though many other developed sites are attractive to users. Fees may not be charged at picnic grounds or at boat launch facilities without boat lifts. As a result, fees cannot be charged at a substantial portion of the recreational areas in the National Forest System.

Separate legislation, not associated with this test, has been proposed in the 101st Congress to expand the Land and Water Conservation Fund authorities nationwide. This legislation would authorize fees at campgrounds not meeting the present requirements for drinking water and trash collection; plus it would authorize fees at concentrated use areas, picnic areas, boat launching ramps, and visitor centers.

The budget proposes legislation to provide the Secretary similar and some additional authorities for charging recreation fees only on the test national forests. The proposal:

- Would permit charging at sites such as certain campground areas, picnic sites, developed boat ramps, swimming sites, and managed parking lots, as well as an admission fee at concertrated use areas. These are the same authorities included in the nationwide legislation.

- Additional authorities included within this test would:

  - provide the Secretary with the authority to charge an admission fee for wilderness, specifically designated rivers, and other areas designated by the Secretary.

  - provide for testing a general recreation use fee through a motorized vehicle parking permit.

All fees, after the 25 percent payment to States, would be retained by the Forest Service for enhancement of the recreation program. In addition to the recreational fees, receipts from recreation special uses (e.g., resorts, winter sports sites, outfitters and guides, etc.) would be deposited in this same special fund.

Use associated with existing rights, permits, contracts, etc., would not be subject to fees. Holders of valid Golden Access or Golden Age Passports would be provided free access to areas where a daily admission fee is otherwise charged, and would be authorized to utilize developed recreation sites at the rate of 50 percent of the established fee.

While the proposed legislation requests broad fee authorities, each forest will test those authorities that best meet the needs of that particular forest and provide a variety of tests. For example, 3 forests in R-2 and R-9 will test a parking permit for motorized vehicles associated with recreational use of the national forest. This parking test would be in lieu of all other recreation fees, except for charge campgrounds.

Local publics will be consulted before final options are selected. This will include determining the amount of fees to be charged.

Evaluation of Results of the Test:
The Forest Service will evaluate the results of the test at the end of FY 1991. The evaluation report and any recommendations for changes will be provided to the Congress.

Challenge Cost-Share Program

The Challenge Cost-Share Program was launched in FY 1986 to respond to Forest Service needs and public desires for expansion and enhancement of wildlife and fish habitat improvement projects and activities. Since that time, the program has expanded to include recreation and trail operations and maintenance, construction of recreation facilities, roads and trails, and research projects.

The forests have sought an excellent array of contributors including: local, county, State, and national agencies, private interest groups, senior citizens, disabled youths, correction facility inmates, students, utility companies, recreation industries, timber operators, interpretive associations, and private businesses. As can be seen in the following table, cooperators have matched appropriated funding at an average of about $2 to $1 to construct, rehabilitate, and enhance improvements in wildlife and fish habitats, recreation facilities, trails, and roads, and promote research projects.

CHALLENGE COST-SHARE FUNDING HISTORY
FY 1986 - 1988
(Dollars in Thousands)

ACTIVITY	FY 1986		FY 1987		FY 1988	
	F. S.	COOPER.	F. S.	COOPER.	F. S.	COOPER.
RECREATION :						
Recreation Management	0	0	0	0	380.7	651.8
Wilderness Management	0	0	0	0	10.0	15.0
Cultural Resources	0	0	0	0	36.5	112.7
Trail Maintenance	0	0	0	0	72.8	128.5
Subtotal - Recreation	0	0	0	0	500.0	908.0
# of Partnerships	0	0	0	0		30
WILDLIFE & FISH :						
Wildlife Habitat	477.7		539.0		902.4	1,649.2
Inland Fish	284.7		403.0		542.8	1,071.3
T&E Species	44.2		384.0		576.3	792.9
Anadromous Fish	97.1		174.0		564.6	1,101.9
Subtotal - W & F	903.7	N/A	1,500.0	2,700.0	2,586.1	4,615.3
# of Partnerships		57		196		429
RESEARCH :	0	0	0	0	0	0
# of Partnerships		0		0		0
CONSTRUCTION :						
Recreation Construction	0	0	0	0	0	0
Road Construction	0	0	0	0	0	0
Trail Construction	0	0	0	0	0	0
Subtotal - Construction	0	0	0	0	0	0
# of Partnerships		0		0		0
TOTAL:						
Dollars	903.7	N/A	1,500.0	2,700.0	3,086.1	5,523.3
# of Partnerships		57		196		459

CHALLENGE COST-SHARE FUNDING HISTORY
FY 1989 - 1991
(Dollars in Thousands)

ACTIVITY	FY 1989 F. S.	FY 1989 COOPER.	FY 1990 F. S.	FY 1990 COOPER.	FY 1991 F. S.	FY 1991 COOPER.
RECREATION :						
Recreation Management	1,287.4	2,740.2	1,265.0	2,530.0	4,000.0 *	8,000.0 *
Wilderness Management	61.5	128.0	160.0	320.0		
Cultural Resources	151.1	300.1	175.0	350.0		
Trail Maintenance	500.0	1,302.6	800.0	1,600.0	1,400.0	2,800.0
Subtotal - Recreation	2,000.0	4,470.9	2,400.0	4,800.0	5,400.0	10,800.0
# of Partnerships		396		600		600
WILDLIFE & FISH :						
Wildlife Habitat	2,293.4	4,148.3	2,550.0	4,612.0	3,000.0	5,000.0
Inland Fish	1,092.7	1,691.8	1,250.0	1,935.0	1,500.0	2,500.0
T&E Species	702.4	1,062.3	2,000.0	3,025.0	2,500.0	4,000.0
Anadromous Fish	2,282.2	2,566.8	1,600.0	1,800.0	2,000.0	2,200.0
Subtotal - W & F	6,370.7	9,469.2	7,400.0	11,372.0	9,000.0	13,700.0
# of Partnerships		867		1,058		1,500
RESEARCH :	418.1	501.9	581.9	600.0	500.0	600.0
# of Partnerships		16		20		20
CONSTRUCTION :						
Recreation Construction	500.0	1,193.3	1,800.0	3,600.0	1,400.0	2,800.0
Road Construction	0	0	1,500.0	1,500.0	1,500.0	1,500.0
Trail Construction	500.0	1,291.0	1,300.0	2,600.0	1,000.0	2,000.0
Subtotal - Construction	1,000.0	2,484.3	4,600.0	7,700.0	3,900.0	6,300.0
# of Partnerships		N/A		12		12
TOTAL : Dollars	9,788.8	16,926.3	14,981.9	24,472.0	18,800.0	31,400.0
# of Partnerships		1,279		1,690		2,132

* Recreation management reflects total funding for recreation, wilderness and cultural resources.

Wildlife and Fish. Projects are accomplished in wildlife; inland fisheries; threatened, endangered, and sensitive species; and anadromous fisheries programs. A variety of activities are initiated to maintain or increase habitat capability, provide for the recovery of listed species on National Forest System (NFS) lands. Examples of projects include seeding of openings with grasses to provide high protein foods for wild turkeys or quail, installation of low head spillways in streams to provide fish passage, placement of instream structures to increase trout habitat, prescribed burning in elk winter range to improve the forage composition for overwintering elk, and installation of hack boxes on cliffs to provide a release site for successful reintroduction of peregrine falcons.

The wildlife and fish challenge cost-share projects had 57 partners in FY 1986, 196 partners in FY 1987, 429 partners in FY 1988, and has increased to 867 in FY 1989. We expect the number to continue to grow in future years.

Appropriated funds in the amount of $7.4 million were allocated to all nine regions of the Forest Service for projects in habitat improvement in FY 1990, with an estimated contribution from cooperators amounting to $11.4 million. The FY 1991 estimate includes $9.0 million for the challenge cost-share program with matching funds provided by cooperators in habitat improvement programs for wildlife, inland fisheries, and anadromous fisheries.

Recreation. The Forest Service objective is to improve recreation services to the public and maximize project accomplishments for the available Federal funding. The recreation program includes recreation management, wilderness management, cultural resource management, trail maintenance, trail construction, and recreation construction. Recreation projects include barrier-free access to recreation facilities for disabled people, interpretive signing, summer youth employment for recreation site maintenance, vegetative management for scenic resource management, renovation of historical buildings for interpretation, cultural resource site predictive modeling, and production of a river safety video.

A total of $2.4 million in appropriated funding is included in the FY 1990 budget, with cooperators contributions estimated at $4.8 million, to continue the challenge cost-share program. The FY 1991 Forest Service share is $5.4 million; we estimate $10.8 million from cooperators.

Road Construction. Where benericial to national forest management, partnerships with public and private sector entities will be strengthened and expanded through the challenge cost-share program. Nationally, $1,500,00 of the road construction funds are identified for this program.

Research. The FY 1989 Appropriation included $500,000 to initiate a Research Challenge Cost-Share Program with funds to be matched on at least a fifty-fifty basis with non-Federal sources. The intent of the program was to leverage Federal forestry reseacrch dollars in program areas benefitting our non-Federal client groups. Although grant proposals from all research areas were considered, three program areas were emphasized: forest products and harvesting research, wildlife and fish habitat research, and recreation research.

A total of $502,000 of cooperator funds were matched with $418,000 of Research Challenge Cost-Share program funds in FY 1989. The proposals funded were from research in forest products and harvesting, wildlife and fish habitat, recreation and other natural resource areas. the remaining $82,000 will be awarded in FY 1990.

Over 16 research partners are cooperating with Forest Service research scientists in these projects, and they are often contributing more than the required share. Partners range from the American Newspapers Publishers Association and QO Chemical Company (forest products and harvesting research), to the National Wild Turkey Federation and Weyerhaeuser Company (wildlife and fish habitat research), to the American Honda Motor Company and the Hillside Trust Foundation of Cincinnati (recreation research), to the Nature Conservancy and the Wisconsin Academy of Science, Arts, and Letters (other research).

Research results from these partnerships will become available in about two years.

The challenge cost-share program continues to grow, increasing not only in dollars, but number of cooperators and, most importantly, the accomplishment of mutually needed project. This program is a most efficient and economical means to serve the needs of our customers.

Geographic Information System (GIS)

Establish geographic information system (GIS) capability Service-wide to assist in the land management resources decisionmaking process. Provide easy to use technology which will facilitate the access, use, and sharing of information and help the Forest Service achieve its mission.

Scope of a Geographic Information System:
A geographic information system (GIS) is a set of tools used to facilitate the storage, retrieval, analysis, and presentation of geographic or spatial information about natural resources, the environment, management decisions, and activities. Most information used by the Forest Service for resource management is geographic in nature and is most often displayed on maps.

The Forest Service has always used maps to display and store geographic resource information. An electronic geographic information system provides for electronic storage of geographic information and retrieval of that information based on geographic location, and uses computer graphics techniques to prepare map displays of this information.

Any activity that has an environmental impact involves an Environmental Impact Statement (EIS) or Environmental Assessment (EA), and requires analysis of a wide variety of geographic information. Information, well organized in an electronic environment, can be easily and consistently retrieved and shared so that more meaningful analysis, with fewer omissions, is more readily accomplished. Some examples are preparation of timber sales, road alignments, wildlife habitat improvement projects, land ownership and rights, and protection of threatened and endangered species. All of these activities demand a thorough analysis of environmental, economic, and social variables.

Need for a Geographic Information System:
The important geographic resource information about the national forests resides mostly on paper maps and documents at the national forest and district offices. In this form it is difficult to retrieve, evaluate, and analyze all relevant information for a particular geographic question or consider alternative solutions.

The major benefit of implementing new GIS tools within the Forest Service lies in the ability to do a better job. Several important legislative acts, such as National Environmental Policy Act (NEPA) and National Forest Management Act (NFMA), require more detailed data collection and analysis. In order to meet planning, public involvement, and implementation requirements, available data must be collected, organized, analyzed, displayed, and shared in tables, graphs and maps. An electronic GIS will enhance the analysis of complex resource management problems. The data discipline required for electronic GIS also helps to assure that decisions are based on timely, accurate, quality information.

Converting from a manual system to an electronic system changes the very nature of how resource work is accomplished. Time formerly spent on costly manual tasks, such as coloring map overlays, can be redirected into productive, professional analysis and response to the public.

The current status of information in the Forest Service consists of scattered collections of data in different formats and on paper at different map scales. The current system does little to assure quality of data and to provide the ability to respond quickly and accurately to the wide variety of issues that must be addressed. As a result, the Forest Service is finding it more and more difficult to produce quality analyses in time to meet legislative requirements and at the same time meet goals of goods, services and resource protection. The feasibility study and cost benefit analysis indicates that the benefit/cost ratio for GIS should exceed 3 to 1. Starting in 1991, annual evaluations of the costs and benefits of GIS will be made using consultant services. The information from these evaluations will be used to adjust the implementation strategy to obtain the greatest benefit.

Information Management Strategy:
In order to meet the increasing demands on the national forests, it is essential that all information needed to accomplish work tasks be integrated into an electronic medium where it can be readily accessed and easily shared.

The complex issues currently facing the Forest Service, and the need to address problems of global and multi-regional magnitude are taxing the current information management and analysis capabilities. To meet these challenges the Forest Service must acquire geographic information systems capability. The continued efficient management of 191 million acres in 156 national forests, 83 experimental forests and ranges, 19 national grasslands, and 13 land utilization projects is dependent on acquisition/implementation of new methods of handling larger amounts of data expeditiously.

Implementation Strategy:
Acquisition of GIS capability will be through a competitive contract which should be awarded in FY 1991. Implementation will be a two stage process. GIS technology will be placed at those ranger districts, supervisor's offices, and other offices which have the immediate need. These sites will be chosen based on the nature of the immediate issues facing them to which GIS may be applied. Over the 8-year system life the remainder of Forest Service offices will acquire the new GIS technology.

As the existing Data General systems reach the limit of their useful life, and as the need to upgrade system capacity arises, replacement systems will be acquired through the GIS contract. We anticipate that both administrative applications, currently supported by the Data General systems, and GIS will be supportable by similar technology.

Funding of GIS Contract

	FY 1991 Estimate	FY 1992 Estimate
Research	479	1,118
State & Private Forestry	240	559
National Forest System	6,394	14,917
Firefighting	1,559	3,637
Construction	1,727	4,024
Permanent Appropriations	320	745
Total	10,719	25,000

International Forestry

The Forest Service has an expanding international program due to new opportunities to benefit from foreign technology, an unprecedented need to assist developing countries, and the need to slow deforestation in the tropics. There are three fundamental objectives:

- To capitalize on international advances in science and technology that can enhance domestic natural resource programs, achieve a better balance in wood products trade, provide for greater global economic stability and contribute to an improved global environment, including potential mitigation of global warming;

- To help developing countries achieve sustainable economic development through natural resource management that meets human needs while protecting environmental quality;

- To cooperate with other organizations and nations to reverse trends and slow the rate of deforestation in the tropics.

International forestry is not a separately identified budget item. The Forest Service funds international activities as components of other line items, in support of parallel domestic issues. Additional funds are provided through reimbursable agreements with the U.S. Agency for International Development (AID), USDA's Office of International Cooperation and Development (OICD), the Food and Agriculture Organization of the United Nations (FAO), and other organizations. In FY 1990, the Forest Service received its first-ever appropriation for an initiative in tropical forestry, in the amount of $3,965,000.

The Forest Service Benefits From Scientific and Technological Exchanges and Cooperative Research

To further the science and practice of forestry and related natural resources management in the United States, the Forest Service cooperates with OICD in carrying out a program of scientific and technical exchange and cooperative research with some 30 countries. Also, in cooperation with the USDA Foreign Agriculture Service and the International Tropical Timber Organization, the Forest Service carries out market analyses and research on wood products trade to enhance the competitiveness of U.S. forest products abroad. In 1989, the Forest Service gained information on forest products technology, new management approaches to agroforestry and urban forestry, new data on ecology of rainforests, insecticide resistance in plants, and control of Armillaria and economically important termites, and new habitat practices for forest wildlife and anadromous salmonoids. In FY 1991 we will seek to expand scientific exchange and research programs with new initiatives on nutrient cycling and long term site productivity, cumulative watershed effects, and forest relationships to global warming. An enhanced program is seen with Czechoslovakia, Poland, the USSR, and other eastern European countries.

The Forest Service Provides Technical Assistance Abroad

Our Forestry Support Program provides technical assistance to AID's natural resource projects worldwide and to Peace Corps foresters by identifying technical advisors from both the public and private sectors, undertaking field visits, conducting short courses and workshops, developing customized training materials, and publishing and disseminating state-of-the-art information. The level of technical assistance depends upon AID funding, but is expected to increase in FY 1991 following the recent favorable review of the first 10 years of this program.

Future activities will address such critical topics as agroforestry, biological diversity, underutilized tropical forest products, and tree seed technology, all with the broad goal of reducing forest and related natural resource deterioration now threatening the resource base of the rural poor. A major new initiative in FYs 1990 and 1991 is the long term technical assistance the Forest Service is providing to a major AID funded forestry development project in Honduras, plus a smaller project in Guatemala. We have also been asked by the World Bank to help design a project in Brazil.

Our Disaster Assistance Support Program, in cooperation with the Office of U.S. Foreign Disaster Assistance, provides assistance in preparedness planning and emergency relief for global natural disasters such as earthquakes, insect plagues, floods, and fires. Forest Service personnel organize and staff emergency response teams, conduct international training sessions and disaster simulation exercises, and provide expert hazard assessment. Funding for these activities, through AID, is expected to continue to increase through FY 1991.

The Forest Service also provides short term training for hundreds of foreign forestry and natural resources students and professionals from more than 50 countries. The number of these visitors has increased steadily in the past and should rise in the future.

The Forest Service Responds to the Challenge of Tropical Deforestation

Using its experience and professional talent, the Forest Service is increasing its role in helping to reverse tropical deforestation and the loss of biodiversity. A continuing thrust in FY 1991 will expand ongoing cooperation with domestic and international agencies such as AID, FAO, the Peace Corps, the International Union of Forestry Research Organizations, the World Bank, the Man and the Biosphere Program, other nations, universities, and nongovernmental organizations to speed implementation of the global Tropical Forestry Action Plan. New programs on technical assistance, training, and research began in FY 1990 and will continue in FY 1991.

Much of our growing international research and assistance activities will be built on a successful domestic research program that has international application. For example, a major part of the research at the Institute of Tropical Forestry in Puerto Rico, the Institute of Pacific Islands Forestry in Hawaii, and the Forest Products Laboratory in Wisconsin has application in the Caribbean, Latin America, the Pacific Islands, and parts of Africa and Asia. Forest Service experience in managing the Caribbean National Forest in Puerto Rico and in advising Western Pacific islands on forestry and natural resources will be valuable for future technology transfer and training initiatives. Worldwide, natural resource managers are coming to grips with critical resource issues that have global impacts. As the principal land management and forestry research organization in the United States, and one of the largest such organizations in the world, the Forest Service—supported by America's strong economy and technological capacities—has both a unique opportunity and responsibility to demonstrate international leadership toward solving some of the world's most pressing forestry and natural resource issues.

Land Management Planning

National Forest Management Act

The Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), requires the Secretary of Agriculture to attempt to develop an integrated land and resource management plan for each administrative unit of the National Forest System (NFS) by September 30, 1985. To implement NFMA requirements, regulations were developed in 1982 to guide land and resource management planning on 191 million acres of the National Forest System. The regulations require integrated planning for all resources (i.e., timber, range, fish and wildlife, water, wilderness, and recreation), as well as coordination of other resources, such as minerals.

The NFMA regulations were revised in 1983 in response to a court decision that the 1979 Roadless Area Review and Evaluation (RARE II) environmental impact statement and associated procedures were inadequate under the National Environmental Policy Act (NEPA). The revision subjects to reevaluation, through forest planning, areas that remain essentially roadless and undeveloped and that have not been designated by Congress for either wilderness or nonwilderness uses.

A major part of the RARE II issue has been resolved through decisions from forest planning and enactment of wilderness legislation. Altogether, 64.7 million acres in roadless areas have been inventoried, 62.0 million through the RARE II process, and 2.7 million acres recommended for wilderness through primitive area reviews. About 17.0 million acres have been designated as wilderness areas; 27.9 million acres have been released for uses other than wilderness; and about 21.2 million of the acres already inventoried remain unresolved, including 4.4 million acres in Alaska.

Land Management Planning

The Forest Service uses the land management planning process to determine the best use of all resources on NFS lands, including recreation, fish and wildlife habitat, water, timber, minerals, range, and wilderness.

The planning process requires a continual flow of information and management direction among the three Forest Service administrative levels: national, regional, and designated forest planning areas. Management direction is based principally on locally derived information about production capabilities. The direction reflects resource needs and conditions pertinent to all levels, and becomes increasingly specific as planning progresses from the national to regional levels and from the regions to the national forests.

As part of the planning process, regional guides were developed by each of the nine Forest Service regions. All nine regional offices have published final regional guides and environmental impact statements required by NFMA. The primary purpose of these guides is to provide national and regional direction in the development of forest plans.

Included in the guides are major issues and management concerns of the regions, as well as tentative resource objectives recommended by RPA for each national forest. While the guide ensures that a consistent approach to national forest planning is followed throughout the region, it allows the individual forests considerable latitude in formulating forest plans.

The guide also helps coordinate NFS programs in the regions with programs in State and private forestry and research.

The forest plans developed under NFMA include management planning for all resources. Of the 123 forest plans to be developed under NFMA, 97 percent have been finalized, another 25 drafts plans have been published or approved for publication, and 1 forest plan, the Klamath National Forest, in California, remains to be published. In addition , the 1979 Tongass National Forest Plan is being revised.

Implementation of Forest Plans

Implementation of forest plans requires the same types of skills as those necessary in forest plan development. Considerable effort is being placed on implementing published forest plans at the regional and forest levels. There was considerable latitude for regions to develop an implementation process responsive to their particular needs. In implementing forest plans, the linkage of the plan to individual project completion is essential. The determination of the consistency of the project with the forest plan, the tie to the budgeting process, and procedures for project execution, administration, and monitoring must be considered.

Forest plans are 10-year planning documents, and will be revised at 10-15 year cycles, or more often if changing issues or conditions warrant. Program development and budgeting is an intermediate step in the Forest Service management process designed to achieve goals and objectives developed in the planning process. The annual budget process reflects the level at which the forest plans are implemented. The plans may be amended based on differences between proposed and actual funding.

Administrative appeals continue to be filed on most forest plans and some litigation has occurred. The appeals process provides an opportunity to have a decision informally reviewed by a higher Forest Service organizational level. This will continue to result in considerable work at forest, region, and national levels as final forest plans are completed in the Pacific Northwest and Pacific Southwest Regions. Forest plans will be implemented as funding levels permit except where action has been withheld pending the outcome of an appeal.

Relationship Between RPA and Land Management Planning
The design of the 1990 RPA Program is based on three components: roles for Forest Service programs, consideration of contemporary issues, and a long-term program strategy. The 1989 RPA Assessment provides an analytical base for anticipating future resource needs. It has been considered in the development and analysis of roles, issues, and alternative long-term strategies.

National forest land management plans, responding to local issues and concerns, provide a basis for development of the alternative strategies. Forest plans established potential objectives which are totaled and presented as one of the alternative strategies. The final 1990 RPA Program will provide general direction through regional guides for subsequent amendments and updates of the forest plans.

The following general requirements outline the relationship between RPA and land management planning at the regional and national forest levels:

- The RPA Program provides national direction and regional output levels to the regions for subsequent amendments and updates of the forest plans.

- Forest plan decisions are guided by forest goals and objectives as established in the forest plan.

- Resource inventories determine the production potential of forest lands. This forest level information is used in preparing forest plans. Each forest evaluates national level RPA objectives to determine if they are compatible with resource supplies, demand levels, economic efficiency, potential environmental effects, and local considerations such as community stability.

- Using forest resource inventories each national forest develops its forest alternatives in compliance with NFMA regulations, the Chief's direction, and the general direction in the regional guide.

The Resources Planning Act

Introduction

The Forest and Rangeland Renewable Resource Planning Act (RPA) of 1974, as amended, directs the Secretary of Agriculture to periodically assess the status of the Nation's forest and range resources and to recommend a Forest Service program for their management and use. The Act requires the development of an assessment every 10 years and a recommended program every 5 years.

The RPA Assessment describes the Nation's renewable resource situation and projects supply and demand for these resources. The 1989 assessment is being printed and will be available for distribution in early 1990. As a direct result of growing populations and associated economic activity, the Assessment predicts that demand for most forest and rangeland resources will increase in the future. The assessment acknowledges that America's national forests cannot meet all projected increases in demand. Therefore, choices must be made about the use of resources on both public and private land.

The 1985 RPA Program is the third recommended program. It recommends a course of action through 2030 for the management and administration of the National Forest System, Forest Service Research, and assistance and leadership on State and private forest lands through State and Private Forestry programs. It is based on information and data from a variety of sources including the 1979 assessment and 1984 assessment supplement; analysis of the nine RPA alternatives discussed in the Draft Environmental Impact Statement (DEIS) released in January 1984; public comments on the DEIS; national direction to assure program consistency; and special evaluations designed to respond to current issues and to aid program development.

The 1990 RPA Program is currently being completed and will respond to the 1989 assessment. It will be delivered by the Secretary of Agriculture to Congress in the spring of 1990. The 1990 program will incorporate the Agency's position on various role questions into the final program, as well as the consideration of the Forest Service response to some 16 contemporary issues. In addition, five alternative program strategies are analyzed in arriving at a final program. Comments have been solicited and are being considered in program formulation.

The assessment and program are transmitted to Congress by the President with a Statement of Policy intended to be used in framing budget requests for Forest Service activities. The President is to carry out programs of the Forest Service according to the Statement of Policy.

Major Findings of the Assessment

The 1989 RPA Assessment found that demand for most resource products and services is likely to continue to increase in the next five decades. Many opportunities also exist to increase supplies.

The greatest increases in timber demand will be for fiber-based products. There are extensive opportunities for increased fiber production on private land to help meet this demand. Recreation patterns are changing: recreationists are demanding shorter trips closer to home, and sites that are accessible by road. The role of the public lands for recreation is likely to increase in the future as access to private land is expected to continue to decline. Fishing and nonconsumptive wildlife recreation use are projected to increase rapidly in the future. Per capita consumption of meat is expected to remain the same in the future, so that increases in demand for meat will grow in proportion to the population. Increases in private rangeland productivity will help meet the demand for flivestock forage. Demand for oil and gas will continue to increase, with supplies depending on world markets and minerals policies in other countries. Finally, the outlook for water quality is future improvements, with pollution control efforts switching from point sources to nonpoint sources.

The following table shows the projected percentage changes in demand between 1987 and 2040 for selected resource outputs and activities:

	Percent			
Activity	Unit of Measure	1987	2040	Change
Timber	billion cu. ft.	18.1	26.7	48%
Range Forage	million AUMs	412.6	664.6	61%
Downhill Skiing	million trips	9.0	31.0	244%
Hiking	million trips	96.0	282.0	194%
Developed Camping	million trips	88.0	164.0	86%
Fishing	million users	42.0*	84.0	100%

* Use in 1980.

The assessment indicates a future of increasing competition for forest and range products. Competition could result in higher prices to consumers, increased dependence on imports of wood products, and deteriorating quality of recreation experiences. However, potential negative impacts can be mitigated through improvements in management and productivity, technological change, and research.

The Recommended Program

The program is a range of activities and outputs with a high and low bound. The high bound responds immediately to the assessment and RPA goals. The low bound is constant through 1990 to help retire the Federal deficit.

National Forest System

The 1985 program for the National Forest System was developed using the most up-to-date information available from forest planning. Future program updates will reflect new data and analysis from more recent forest planning activities.

The program projects a 50 percent increase in minerals and energy cases between 1986 and 2030. The increase in funding projected by 2030 will allow the Forest Service to protect resource values and to streamline mineral and energy procedures with increasing production.

Recreation use almost doubles on National Forest lands by 2030. The program capitalizes on other resource management activities and volunteer programs to help meet increasing demands in an efficient manner. Emphasis is placed on improving and maintaining existing facilities and trails.

The program projects increases in wilderness acreage. Activities to protect wilderness values focus on improvements to the trail system and administration and management of the wilderness system for all wilderness uses.

Domestic livestock grazing increases from 9.8 million animal unit months (AUMs) in 1986, to 10.3 million AUMs at the low bound and 11.3 million AUMs at the high bound by 2030. Range management emphasizes improvement and maintenance of resource productivity.

Timber offered for sale increases from the 1985 RPA recommended level of 11.4 BBF in 1986, to 15.6 BBF at the low bound and 20.0 BBF at the high bound by 2030. The program relies on new technology to provide additional economic opportunities and emphasizes cost reduction and community stability. Reforestation and timber stand improvements support harvest levels at the high bound. At the low bound, these activities are held constant through 1990, which will defer needed timber stand improvement until after that time.

The program maintains or enhances long term water supplies and water quality. Soil and water program funding nearly doubles by 2030.

The program provides for balanced attention to all wildlife and fish habitats, and provides for use to increase by 22 percent at the low bound and 74 percent at the high bound by 2030. The program at the high bound includes special emphasis to improve habitat for threatened and endangered species, salmon, and steelhead by the year 2000.

Protection and support activities in aviation and fire, land management, and human resource programs meet long term objectives, but require a high level of risk management for future uncertainty.

Rehabilitation and reconstruction of buildings and roads are at low levels until after 1990 at the low bound.

State and Private Forestry

Fifty-seven percent of the Nation's commercial forest land is owned by nonindustrial private forest (NIPF) landowners. These lands currently support 42 percent of the Nation's softwood and hardwood timber growing stock and 33 percent of the Nation's sawtimber inventory. This ownership category is characterized by a relatively low level of forest management and, therefore, offers the greatest opportunity for increasing timber supplies in this country.

The objectives of State and Private Forestry are to increase the productivity of the NIPF lands to meet projected resource demands at a reasonable price. The RPA Program will meet this objective by providing national leadership, incentives, and coordination in forest management, forest products utilization, planning, assistance, pest management, and cooperative fire protection.

Both the high and low bounds rely on the States and the private sector to provide an increasing share of the cost over time. Expected outputs are the same at both bounds after 2000, but the Federal presence is different. The high bound assumes States will gradually replace Federal financial assistance and this will be accomplished by 2000. The low bound assumes States will replace Federal financial assistance immediately.

Research

The Research Program is designed to provide knowledge and technology that increase economic growth and environmental capabilities on all of America's forest and range lands. A primary focus of the RPA Research Program is to support efficient management of National Forest System lands. The ability to meet planned output levels is directly related to early investments in research, and a strong research program is very likely to result in resource outputs in excess of those shown at levels of investments described in the Program.

The Research Program has two major components: 1) the base level, and 2) additional research initiatives. A substantial portion of the base program is aimed at sustaining technological effectiveness. Other research in the base program is research to increase technological capability and effectiveness.

To satisfy the additional needs identified for management and assistance of the Forest Service and other Federal, State, and private sector users of Forest Service research, an additional $44 million would be needed annually above 1986 levels for high priority initiatives such as biotechnology and acid deposition. The most distinct differences between the high bound and low bound are the rates of implementation of currently identified initiatives and some reordering of priorities among initiatives. At the high bound most of the initiatives would be funded by 2000; at the low bound this level of funding will not be reached until 2030.

The following summary table compares the 1991 low and high bound totals to the 1991 estimate.

1991 PRESIDENT'S BUDGET COMPARED TO 1991 RPA PROGRAM

(Millions of 1991 dollars)

		1991 Estimate	Low Bound 1991	High Bound 1991
Research		$148.7	$133.8	$154.7
State and Private Forestry		56.6	31.3	103.3
National Forest System	1/	1,559.0	965.2	1,500.6
Construction	2/	230.4	234.5	321.8
Land Acquisition	3/	2.2	6.1	48.4
America the Beautiful	4/	263.9	0	0
Permanent App. Working Funds	5/	148.2	313.7	322.7
Permanent App. Payment Funds		365.6	0	0
K-V and other Trust Funds		329.5	261.8	321.7
Const of Roads by Timber Purchaser		(116.3)	(141.3)	(287.0)
TOTAL		$3,104.1	$1,946.4	$2,773.2

MAJOR OUTPUTS

Major Output		1991 Estimate	Low Bound 1991	High Bound 1991
Range Management /MM AUMs		9.8	9.8	9.9
Recreation Use /MM RVD		146.5	219.0	252.0
Wilderness Management /MM Acres		15.8	35.0	37.0
Trail const /Reconst. Miles		1,621.0	1,035.0	4,675.0
Timber Offer /BBF		10.6	9.3	11.9
Reforestation /M Acres	6/	484.0	353.0	430.0
Timber Stand Improve. /M Acres	6/	327.0	325.0	419.0
Road Const/Reconst. Miles	7/	1,148.0	1,324.0	2,796.0
Purchaser Road Const. /Miles		5,552.0	6,328.0	8,728.0

1/ Also includes Reforestation Trust Fund, Range Betterment Fund, $9.0 million Operation and Maintenance of Recreation Facilities, and Firefighting.

2/ Includes $7.5 million Operation and Maintenance of Recreation Facilities.

3/ Only includes Acquisition of Lands for National Forests, Special Acts, and Acquisition of Lands to Complete Land Exchanges.

4/ Includes $88.9 million for Land Acquisition.

5/ Includes Tongass Timber Supply Fund.

6/ Includes acres accomplished with appropriated and K-V funds.

7/ Includes purchaser election program (PEP) miles.

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United States Department of Energy
Fiscal Year 1991

Congressional Budget Request

Fossil Energy Research and Development
Clean Coal Technology
Naval Petroleum and Oil Shale Reserves
Strategic Petroleum Reserves
Energy Conservation
Emergency Preparedness
Economic Regulation
Energy Information Administration
Non-Defense Activities Construction Project Data Sheets

Assistant Secretary,
Management and Administration
Office of the Controller
Washington, DC 20585
January 1990

DEPARTMENT OF ENERGY

FISCAL YEAR 1991 CONGRESSIONAL BUDGET REQUEST

FOSSIL ENERGY RESEARCH AND DEVELOPMENT
CLEAN COAL TECHNOLOGY
NAVAL PETROLEUM AND OIL SHALE RESERVES
STRATEGIC PETROLEUM RESERVES
ENERGY CONSERVATION
EMERGENCY PREPAREDNESS
ECONOMIC REGULATION
ENERGY INFORMATION ADMINISTRATION

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Department of Energy
FY 1991 Congressional Request

Summary of Estimates by Appropriation
Budget Authority
(Dollars in Million)

	FY 1989 Actual	FY 1990 Approp.	FY 1991 Departmental Request
Appropriation Before the Energy and Water Development Subcommittees:			
Atomic Energy Defense Activities	$6,752,575	$7,722,905	$8,592,000
General Science and Research Activities	908,471	1,093,316	1,273,732
Isotope Production and Distribution Fund	(209)	16,016	0
Energy Supply Research and Development	1,848,973	1,892,087	2,085,237
Environmental Restoration and Waste Management	1,657,347	2,218,317	2,791,436
Uranium Supply and Enrichment Activities	(244,053)	(4,745)	0
FERC - Salaries and Expenses	108,760	114,918	122,750
Nuclear Waste Disposal Fund	366,832	295,156	292,833
Geothermal Resources Development Fund	75	74	80
Power Marketing Administrations:			
Alaska Power Administration	3,159	3,134	3,233
Bonneville Power Administration	159,517	258,200	170,100
Southeastern Power Administration	36,267	18,456	9,285
Southeastern - Continuing Fund	3,072	0	0
Southwestern Power Administration	15,389	25,257	20,107
Western Area Power Administration	271,145	294,218	298,464
Total, Power Marketing Administrations	488,549	599,065	501,189
Departmental Administration	213,848	202,185	224,427
Office of Inspector General	20,959	22,638	28,421
Total, Appropriation Before the Energy And Water Development Subcommittees	$12,122,127	$14,171,932	$15,912,105

Department of Energy
FY 1991 Congressional Request

Summary of Estimates by Appropriation
Budget Authority
(Dollars in Million)

	FY 1989 Actual	FY 1990 Approp.	FY 1991 Departmental Request
Appropriation Before the Interior and Related Agencies Subcommittees:			
Clean Coal Technology	187,800	554,000	456,000
Fossil Energy Research and Development	380,025	416,641	202,309
Naval Petroleum and Oil Shale Reserve	185,071	189,439	210,610
Energy Conservation	316,809	370,918	182,591
Energy Regulation	18,668	18,198	16,408
Emergency Preparedness	6,154	6,551	6,467
Strategic Petroleum Reserve	173,421	192,483	195,633
Strategic Petroleum Account	242,000	435,865	228,393
Energy Information Activities	62,856	64,319	66,608
Total, Appropriation Before the Interior and Related Agencies Subcommittees	1,572,804	2,248,414	1,565,019
Total, Appropriation Before the Energy and Water Development Subcommittees	12,122,127	14,171,932	15,912,105
Payment to States	2,249	2,249	2,343
Total, Department of Energy	$13,697,180	$16,422,595	$17,479,467

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL STAFFING REQUEST
TOTAL WORK FORCE

	FY1989 FTE USAGE	FY1990 -FY89	FY1990 CONGR REQ	FY1991 -FY90	FY1991 CONGR REQ
ENERGY & WATER SUBCOMMITTEE					
HEADQUARTERS	4,926	558	5,484	99	5,583
FIELD	9,480	-63	9,417	-179	9,238
SUBCOMMITTEE TOTAL	14,406	495	14,901	-80	14,821
INTERIOR SUBCOMMITTEE					
HEADQUARTERS	1,212	-42	1,170	-52	1,118
FIELD	917	12	929	-90	839
SUBCOMMITTEE TOTAL	2,129	-30	2,099	-142	1,957
GRAND TOTAL	16,535	465	17,000	-222	16,778
ADJUSTMENT				-16	-16
ADJUSTED TOTAL	16,535	465	17,000	-238	16,762

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL STAFFING REQUEST
TOTAL WORK FORCE

	FY1989 FTE USAGE	FY1990 -FY89	FY1990 CONGR REQ	FY1991 -FY90	FY1991 CONGR REQ
10:ENERGY SUPPLY RESEARCH AND DEV	958	118	1,076	7	1,083
HEADQUARTERS	678	119	797	7	804
FIELD	280	-1	279	0	279
16:URANIUM ENRICHMENT	62	5	67	0	67
HEADQUARTERS	52	4	56	0	56
FIELD	10	1	11	0	11
17:ISOTOPE PRODUCTION AND DISTRIB	0	2	2	0	2
HEADQUARTERS	0	2	2	0	2
20:GENERAL SCIENCE AND RESEARCH	49	37	86	12	98
HEADQUARTERS	49	37	86	12	98
25:ATOMIC ENERGY DEFENSE ACTIVITI	2,999	411	3,410	45	3,455
HEADQUARTERS	330	287	617	40	657
FIELD	2,669	124	2,793	5	2,798
27:ENV RESTORATION & WASTE MGT	68	113	181	20	201
HEADQUARTERS	60	36	96	20	116
FIELD	8	77	85	0	85
30:DEPARTMENTAL ADMINISTRATION	3,347	-200	3,147	0	3,147
HEADQUARTERS	1,692	-20	1,672	0	1,672
FIELD	1,655	-180	1,475	0	1,475
32:INSPECTOR GENERAL	189	51	240	16	256
HEADQUARTERS	189	51	240	16	256
34:ALASKA POWER ADMINISTRATION	31	4	35	0	35
FIELD	31	4	35	0	35
36:BONNEVILLE POWER ADMIN	3,318	-88	3,230	-100	3,130
FIELD	3,318	-88	3,230	-100	3,130
38:SOUTHEASTERN POWER ADMIN	38	2	40	0	40
FIELD	38	2	40	0	40
42:SOUTHWESTERN POWER ADMIN	186	-2	184	2	186
FIELD	186	-2	184	2	186
46:WAPA - POWER MARKETING	1,163	-20	1,143	-83	1,060
FIELD	1,163	-20	1,143	-83	1,060
50:WAPA - COLORADO RIVER BASIN	240	0	240	0	240
FIELD	240	0	240	0	240
52:FEDERAL ENERGY REGULATORY COMM	1,497	73	1,570	0	1,570
HEADQUARTERS	1,497	73	1,570	0	1,570
54:NUCLEAR WASTE FUND	266	-17	249	1	250
HEADQUARTERS	156	-11	147	4	151
FIELD	110	-8	102	-3	99
56:GEOTHERMAL RESOURCES DEV FUND	1	0	1	0	1
HEADQUARTERS	1	0	1	0	1
63:CLEAN COAL TECHNOLOGY	53	5	58	5	63
HEADQUARTERS	21	5	26	0	26
FIELD	32	0	32	5	37
65:FOSSIL ENERGY RESEARCH AND DEV	739	-22	717	-68	649
HEADQUARTERS	172	-35	137	18	155
FIELD	567	13	580	-86	494
70:NAVAL PETROL & OIL SHALE RES	92	-3	89	2	91
HEADQUARTERS	19	-1	18	2	20
FIELD	73	-2	71	0	71
75:ENERGY CONSERVATION	339	13	352	-64	288
HEADQUARTERS	208	10	218	-47	171
FIELD	131	3	134	-17	117
80:EMERGENCY PREPAREDNESS	69	2	71	0	71
HEADQUARTERS	69	2	71	0	71
81:ECONOMIC REGULATION	235	-29	206	-25	181
HEADQUARTERS	235	-29	206	-25	181
83:STRATEGIC PETROLEUM RESERVE	140	0	140	8	148
HEADQUARTERS	26	2	28	0	28
FIELD	114	-2	112	8	120
90:ENERGY INFORMATION ACTIVITIES	462	4	466	0	466
HEADQUARTERS	462	4	466	0	466
GRAND TOTAL	16,335	665	17,000	-222	16,778
ADJUSTMENT				-16	-16
ADJUSTED TOTAL	16,335	665	17,000	-238	16,762

VOLUME 5

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

DEPARTMENT OF ENERGY

FISCAL YEAR 1991 CONGRESSIONAL BUDGET REQUEST

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

PROPOSED APPROPRIATION LANGUAGE

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

For necessary expenses in carrying out fossil energy research and development activities, under the authority of the Department of Energy Organization Act (Public Law 95-91), including the acquisition of interest, including defeasible and equitable interests in any real property or any facility or for plant or facility acquisition or expansion, [$422,062,000] $202,309,000 remain available until expended, of which [$249,000] $267,000 is for the functions of the Office of the Federal Inspector for the Alaska Natural Gas Transportation System established pursuant to the authority of Public Law 94-586 (90 Stat. 2908-2909) and of which [$4,000,000 shall be available for continued construction of DOE Fossil Energy building B26][1] $17,000,000 is for implementation of one or more oil and gas recovery and geoscience consortia with universities and industry, in which each consortium provides with at least 50 percent cost-sharing from non-Federal participants.[2] and of which $2,669,000 is for the fuels program:[3] Provided, That no part of the sum herein made available shall be used for the field testing of nuclear explosives in the recovery of oil and gas.

[Of the funds herein provided, $40,900,000 is for implementation of the June, 1984 multiyear, costshared magnetohydrodynamics program targeted on proof-of-concept testing: Provided, that 35 per centum private sector cash or in-kind contributions shall be required for obligations in fiscal year 1990, and for each subsequent fiscal year's obligations private sector contributions shall increase by 5 per centum over the life of the proof-of-concept plan: Provided further, that existing facilities, equipment, and supplies, or previously expended research or development funds are not cost-sharing for the purposes of this appropriation, except as amortized, depreciated, or expensed in normal business practice: Provided further, That cost-sharing shall not be required for the costs of constructing or operating Government-owned facilities or for the costs of Government organizations, National Laboratories, or universities and such costs shall not be used in calculating the required percentage for private sector contributions: Provided further, That private sector contribution percentages need not be met on each contract but must be met in total for each fiscal year:[1] Provided further, That section 303 of Public Law 97-257 is further amended by changing the number for the Office of the Assistant Secretary for Fossil Energy to "715", changing the number for the Pittsburgh Energy Technology Center to "290", changing the number for the Morgantown Energy Technology Center to "275", and changing the number for the headquarters organization of the Assistant Secretary for Fossil Energy to "not less than 125".[2]] (Department of the Interior and Related Agencies Appropriation Act, 1990.)

Explanation of Changes

1/ Due to fiscal constraints, no funds are requested for FY 1991 to continue construction of building B26.

2/ A new initiative to perform geoscience research with a consortia of universities and industry will begin in FY 1991.

3/ The Fuels Program was transferred to Fossil Energy from the Economic Regulatory Administration on February 7, 1989.

4/ Due to fiscal constraints, no funds have been requested for FY 1991 to continue the Magnetohydrodynamics program.

5/ Although the requested staffing for FY 1991 is below the Congressional floor, the current on-board staffing is in compliance with the Congressional floor and no precipitous actions will be taken to reduce staffing until such time that the floors are either abolished or reduced by the Congress.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

OVERVIEW

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

MAJOR FACTORS AFFECTING THE NEED FOR FOSSIL ENERGY RESEARCH AND DEVELOPMENT

Fossil fuels -- oil, natural gas and coal -- accounted for about 89 percent of the energy consumed in the United States during 1988, and will supply the majority of the Nation's energy needs well into the next century. Assuring availability of these fuels or broadly usable, economically competitive substitutes is thus a major component of the national energy policy.

A major factor for ensuring a viable future fossil energy option is reducing selected pollutants emitted through fossil fuel use while simultaneously retaining economic competitiveness. The President's Clean Air Act Proposal, which was sent to Congress on July 21, 1989, contains a number of market based, environmental initiatives. Of particular relevance to the Fossil Energy R&D program are provisions:

- To control through market based solutions, emissions of acid rain precursors.
- To regulate hazardous air emissions from stationary sources.
- Relating to mobile sources, whereby programs would be established for the use of vehicles operated on clean fuels.

Another driving factor is the increasing level of imported oil, although from more secure sources than in the 1970's, and the potentially adverse future implications for U.S. energy security and stability since the oil market place is truly globally interconnected. Oil consumption accounted for 42 percent of U.S. fuel use in 1988. The portion of U.S. oil consumption that is imported is growing rapidly since lower oil prices have reduced domestic exploration and production. Domestic oil production for the first six months of 1989 was at its lowest point in 25 years. This trend is also reflected in projections done for the U.S. Energy Information Administration's 1989 Annual Energy Outlook (published January 1989), which show gross oil imports (crude and petroleum products) in the "base case" going from 47 percent of domestic consumption in 1987 to 53 percent in 1990, and rising steadily to 66 percent by the year 2000 due to the projected availability of moderately priced imports.

While there are promising technological approaches for adding to domestic oil production, the magnitude of our country's appetite for liquid fuels, compared to the relatively small size of the domestic resource (oil accounts for only about 3 percent of U.S. estimated recoverable fossil fuel reserves) and the uncompetitive economics of current, more advanced technologies suggests that conservation and use of other fuels must play an increasingly important role in any practical and economic strategy to reduce oil import dependence.

There are a number of sound business/economic reasons, however, why industry is unlikely to make a rapid transition in fuel-use patterns, including:

o The lack of alternative, competitive technologies for making liquid products from non-petroleum fuels that can substitute in existing applications, particularly in the transportation sector where most oil is currently consumed.

o The lack of competitive technologies for substituting non-petroleum fuels in certain applications.

o The existence of a variety of non-technical barriers (e.g., non-productive regulations) to increased use of non-petroleum fuels.

o The natural risk aversiveness of U.S. industry and consumer oriented regulators to major capital and operating investments that may be publicly unacceptable, have low or negative rates of investment return, and that may face early obsolescence.

It is also important that overall future domestic energy prices remain reasonable both to assist U.S. industries, international competitiveness and to recognize our citizens rights and expectations. The most effective approach, which relies on the free market, is to encourage interfuel and intrafuel competition. Helping to ensure a "level playing field" by eliminating non-technical constraints on demand (e.g., non-productive regulations) and fostering development of technologies that reduce costs related to energy supply and utilization can encourage competition among fuels.

Another major factor affecting the need for fossil energy R&D is the U.S. trade deficit. U S. owned technological advances that contribute to reduced growth of oil imports will help significantly, since these oil imports constitute a significant portion of the overall trade deficit. The availability of new U.S. owned technology will also aid efforts to promote the export of U.S. coal and economically competitive technology, which would help to reduce the deficit as well as providing additional incentive for private sector groups to commercialize new U.S. fossil fuel technologies.

Fossil Energy Strategic Goals

Administration policy and guidance, DOE mission statements, Congressional guidance and analyses of fossil fuel supply and utilization trends and issues, provide the framework within which the Office of Fossil Energy R&D

program has been developed. Included in this framework are the strategic goals which follow, and, in effect, provide an indication of how FE programs are addressing the issues outlined earlier.

Recognizing the environmental, economic, energy security and trade-related drivers discussed above, complementary overall strategic goals have been established for FE:

1. Provide environmentally, economically superior technology for the generation of electrical and thermal energy, and for the production of fossil-fuel-based chemicals and products for the electric utility, industrial, and commercial/residential markets. An increasingly important "driver" related to this goal is the potential for regional electricity short-falls starting in the 1990's.

2. Ensure the strategic security of liquid and gaseous fuel supplies. This implies a reasonable strategic stock in the Strategic Petroleum Reserve and readiness for its use, reduced dependence on disruptable sources, supply stability, tolerable import levels, and price levels that do not harm U.S. industrial competitiveness.

3. Provide technology and technology-based products that improve U.S. international competitiveness by reducing domestic manufacturing costs for existing products or generating export sales for technology/products.

4. Provide expanded markets for domestic fossil fuel producers. This includes new domestic markets, increased share in existing markets, increased exports, and added value products.

5. Maintain world leadership in our fossil fuel technology and service base for resource extraction, upgrading, delivery and environmentally sound utilization.

The FY 1991 Fossil Energy R&D budget encompasses a number of shifts in emphasis from past Administration budgets in recognition of the particularly high priority associated with the first two strategic goals cited above. For coal R&D, while great importance has traditionally been attached to ensuring that process/technology research is coupled with the appropriate environmental research, even greater emphasis has been placed on improving environmental performance of technologies by:

o Addressing global warming concerns, particularly through increased emphasis on high efficiency system development

o Addressing air toxics

o Pursuing a development schedule responsive to proposed Clean Air Act changes (acid rain, alternate fuels)

o Initiating high percentage emission control technology development, responsive to new plant controls under the proposed Clean Air Act changes

For petroleum R&D, new thrusts are underway in FY 1991 that are targeted at improving environmental performance and increasing domestic liquid fuels supply, including:

o Initiating a research program into understanding and managing the environmental impacts of advanced extraction processes and effectively managing all classes of oilfield wastes.

o Taking steps to expedite the transfer of technology that will encourage continued production from marginal fields until that time when advanced extraction technologies become available.

o Providing significant funding for geoscience R&D to be proposed by an industry - university R&D consortia. The geoscience consortia initiative will allow the oil and gas industries, and the universities with which they can collaborate to establish some of the research goals by means of proposals which they submit to DOE.

The FE program pursues these strategic goals through activities which identify R&D opportunities and conduct R&D in the extraction, processing, and utilization of domestic fossil fuel resources in order to reduce the technical and financial risk and to provide essential information for the private sector to make process development and commercial plant deployment decisions.

Another goal is that all process/technology research will be coupled to advanced research activities needed to improve the understanding of fundamental scientific and engineering mechanisms. They include fundamental research on physical, chemical and thermodynamic characteristics of fossil fuels and their derivatives, fluid phenomena, solids transport, multiphase flow, combustion, materials, instrumentation and analytical techniques, environmental sciences, geosciences and innovative concepts. This knowledge will permit the eventual development and optimization of new fossil fuel processes and products.

The FE program pursues the above goals through a variety of strategic objectives, which cover all coal, oil and gas-related activities. While these objectives provide the framework for most FE activities, it should be noted that there are other related activities that are also performed. These activities, which reside in FE because of its management and technical experience/expertise include: general policy and strategic studies related to fossil energy; studies and analysis on fossil fuel transportation issues and certain energy supply aspects of leasing; management of the Liquefied Gaseous Fuels Spill Test Facility program to address safety issues associated with large spills of gaseous fuels and other toxic and explosive liquefied gases; management and input to the Hydrocarbon Geoscience Research Coordinating Committee to insure that all geoscience research activities within DOE associated with fossil fuel location and extraction are coordinated and integrated; and support to federal agencies on fossil energy related matters.

FE promotes the development of interfuel competition and markets for U.S. natural gas and electricity through its regulation of natural gas and electricity imports and exports. Administration clean air goals are supported through the permitting of facilities that allow the import of competitive and reliable electricity. Both the economy and environment benefit from the program's authorization of competitive sources of natural gas which promote interfuel competition and ensure that the Nation has available a secure supplemental source of environmentally clean natural gas.

Program Guidelines

In addition to the above program objectives, there are a number of guidelines and criteria that are observed in the planning and execution of FE programs. One such guideline is that an appropriate mix of research performing entities should be sought. It should also seek to sustain, in order to ensure continuity and the availability of expertise, an appropriate infrastructure in fundamental and applied research on fossil fuels at universities, national laboratories, and in the private sector.

Regarding private sector participation, private sector input is solicited during the program planning process through a variety of mechanisms, including advisory groups, workshops and peer reviews. In the program execution phase, substantial emphasis is placed on program evaluation to assure that intended benefits are realized and on cost-sharing and teaming with other R&D performers to facilitate the transfer of technology to the private sector and to reduce federal expenditures. Inherent in this approach is an attempt to attract research performers that have a long-term, market-based commitment to an area of research and to the ultimate application of the research results. In general, industry, trade and consortia representatives, individual states, and even foreign entities will be more willing to co-invest money in potential high payoff R&D as risks and uncertainties are reduced and market opportunities and return-on-investment are more evident, and thus cost-sharing frequently becomes more attractive as R&D approaches the proof-of-concept stage.

One of the primary goals of all the applied research areas in FE is to effectively transfer technology from Federal and university laboratories to the U.S. private industry. The earlier the U.S. industry and/or their trade and consortia representatives (EPRI, GRI, etal.) are involved, and the more directly that the research agenda is guided by the companies' own economic self-interest, the more effective the transfer is likely to be.

A new consortia approach will be initiated in FY 1991, which is expected to produce a variety of benefits, including enhanced cost-sharing and technology transfer, and assurance of industry commitment. Under this approach, geoscience R&D will be conducted on a competitive basis with a consortia of states, industry and leading universities under the auspices of the oil and gas programs.

Many of the same factors that make participation with specific elements of the U.S. private sector desirable have motivated FE to seek state and international cooperative efforts. FE had been streamlining procedures for Federal/State cooperation in FE R&D, to ensure coordinated planning and to promote leveraging of DOE funding with matching State funds and is now moving to enhance elements of competition and add regional perspectives. An important by-product of this approach is that it permits State governments to become aware of the range of FE R&D activities already in progress, to avoid duplication of effort and helps the Federal government understand first hand the priorities and potentially available incentives of individual states. Relative to international activities, FE is taking steps to ensure that the U.S. benefits directly from cooperative research with foreign governments and multilateral institutions as well as enhanced international regulatory coordination. In addition to research benefits, such cooperation is being explored to help create market opportunities for U.S. fuels and technologies.

FOSSIL ENERGY PROGRAM BUDGET

The levels of Federal support in this budget for the various Fossil Energy technologies are consistent with the funding for other energy related technologies, and are appropriate given overall Federal budget constraints and priorities. It should be noted that as in previous years, this budget supports the performance of beneficial work for others performed on a reimbursable basis including costs associated with the use of facilities and staff resources.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

LEAD TABLE

Fossil Energy Research and Development

Activity	FY 1989	FY 1990[a]	FY 1991 Base	FY 1991 Request	Program Change Request vs Base	
					Dollar	Percent
Coal						
Control Technology and Coal Preparation	$ 48,927	$ 57,615	$ 57,615	$ 33,529	$ -24,086	-42%
Advanced Research and Technology Development	25,564	26,390	26,390	26,488	+98	0%
Coal Liquefaction	32,389	34,526	34,526	10,623	-23,903	-69%
Combustion Systems	26,696	33,177	33,177	17,623	-15,554	-47%
Fuel Cells	26,534	37,999	37,999	7,082	-30,917	-81%
Heat Engines	22,258[b]	20,942	20,942	6,043	-14,899	-71%
Underground Coal Gasification	1,371	815	815	465	-350	-43%
Magnetohydrodynamics	37,000	40,367	40,367	0	-40,367	-100%
Surface Coal Gasification	21,557	23,428	23,428	8,485	-14,943	-64%
Total Coal	242,296	275,259	275,259	110,338	-164,921	-60%
Petroleum						
Advanced Extraction & Process Technology	4,201	3,553	3,553	12,930	+9,377	+264%
Enhanced Oil Recovery	23,583	27,346	27,346	27,105	-241	-1%
Oil Shale	10,530	9,014	9,014	662	-8,352	-93%
Total Petroleum	38,314	39,913	39,913	40,697	+784	+2%
Gas						
Unconventional Gas Recovery	11,384	14,429	14,429	13,674	-755	-5%
Total Gas	11,384	14,429	14,429	13,674	-755	-5%
Program Direction and Management Support						
Headquarters Program Direction	13,507	16,225	16,225	9,956	-6,269	-39%
ETC Program Direction	50,821	51,767	51,767	21,601	-30,166	-58%
Federal Inspector for the Alaska Gas Pipeline	249	246	246	267	+21	+9%
Total Program Direction and Management Support	64,577	68,238	68,238	31,824	-36,414	-53%

Lead Table
Fossil Energy Research and Development (Cont'd)

Activity	FY 1989	FY 1990[a]	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Plant and Capital Equipment						
Capital Equipment	$ 500	$ 1,480	$ 1,480	$ 1,273	$ -207	-14%
Construction	21,250	10,557	10,557	1,122	-9,435	-89%
Total Plant and Capital Equipment	21,750	12,037	12,037	2,395	-9,642	-80%
Cooperative R&D	...	4,631	4,631	...	-4,631	-100%
Environmental Restoration	...	1,029	1,029	712	-317	-31%
Fuels Programs	2,704[c]	2,735[c]	2,735[c]	2,669	-66	-2%
Subtotal Fossil Energy Research and Development	$381,025	$418,271	$418,271	$202,309	-215,962	-52%
Use of Prior Year Balances and Other Adjustments	-1,000	-1,630	-1,630	...	+1,630	N/A
Total Fossil Energy Research and Development	$380,025	$416,641	$416,641	$202,309[b]	$-214,332	-51%
Operating Expenses	(358,275)	(404,604)	(404,604)	(199,914)	(-204,690)	-51%
Capital Equipment	(500)	(1,480)	(1,480)	(1,273)	(-207)	-14%
Construction	(21,250)	(10,557)	(10,557)	(1,122)	(-9,435)	-89%
Staffing (FTE's): Direct	208[d]	232[e]	232[e]	193[g]		
Staffing (FTE's): Indirect	531[d]	485[e]	485[e]	456[f][g]		

[a] FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P. L. 101-164 reductions to fund anti-drug activities.

[b] FY 1989 appropriated funds in the amount of $574,000 were utilized for SBIR and were replaced with a like amount of prior year funds to continue the Heat Engines program at the intended level of effort.

[c] Indicated funds include program administration support from the Economic Regulatory Administration in the amount of $83,000 in FY 1989 and $102,000 in FY 1990.

[d] Includes 18 FTE's for the Fuels Programs supporting 25 full time personnel transferred to FE in February 1989, and 2 FTE's for the Federal Inspector for the Alaska Pipeline.

e/ Includes 25 FTE's for the Fuels Programs and 2 FTE's for the Federal Inspector for the Alaska Pipeline.

f/ Includes 29 FTE's for the Fuels Program and 3 FTE's for the Federal Inspector for the Alaska Pipeline.

g/ The current on-board manpower is in compliance with the Congressional floors and no precipitous actions will be taken to reduce staffing until such time that the floors are either abolished or reduced by Congress.

h/ The FY 1991 program includes $17,000,000 for an integrated initiative to competitively support oil and gas recovery and geoscience research consortia with industry, states and leading universities. The initiative will require cost-sharing and the final allocation of funds will depend upon industry needs and consortia proposals. Preliminary funding levels within existing program structure consist of: $3,000,000 -- Advanced Extraction and Process Technology; $10,000,000 -- Enhanced Oil Recovery and $4,000,000 -- Unconventional Gas Recovery.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Control Technology and Coal Preparation

FY 1990 Appropriation	$57,615
Advanced Research	
o Decrease research on fundamental hot gas cleanup processes, hot particulate filtration, and surface science, and continue generic research on acid rain precursors	-433
Coal Preparation	
o Complete testing of the Gravimelt integrated system	-1,974
o Complete PETC Hi-Bay research	-493
o Complete DOE/EPRI cooperative research for fine coal cleaning	-2,639
o Eliminate funding for the cooperative agreement with the State of Illinois on high sulfur coal research	-1,481
o Complete research at Ames Laboratory	-1,125
o Decrease level of bench scale testing on advanced physical and chemical concepts; increase funding for research on controlling pre-NSPS utility boiler emissions	+218
o Decrease in-house research and program management support	-261
Subtotal	-7,755

Flue Gas Cleanup

o Combined NO_x/SO_x Control: complete funding for moving-bed copper oxide process in FY 1990; reduce level of research on advanced chemistry, economic evaluations, large scale development of NO_x/SO_x processes, and advanced separation technology	-4,928
o Acid Rain (SO_x) Control: continue TUNG process; decrease funding level of low cost duct injection; complete enhanced mass transfer effect on sorbent utilization	-2,027
o NO_x Control: decrease level of effort for advanced research on reburning, catalytic, and post combustion concepts for NO_x control	-1,413
o Continue large scale testing of fine particulate control technology, research on the control of emissions from small scale boilers, and technical and program management support; initiate CO_2 control technology development	+145
Subtotal	-8,223

Gas Stream Cleanup

o Pressurized Fluidized Bed Combustion (PFBC): conduct research on barrier technical issues for particle control	+443
o Integrated Gasifier Combined Cycle (IGCC): increase funding for novel sulfur recovery concept; decrease funding for the particulate control test facility	-4,091
o Direct Coal-Fired Turbines (DCFT): continue testing of cleanup equipment for METC advanced combustor; begin long-term tests of selected granular-bed filter concepts	+130
o Supporting R&D: perform lab scale testing of ceramic membranes; continue modest level of effort in development of ceramic candle and cross flow filter materials and particle control concepts testing	-639
o Complete extended operation of the Calderon PDU	-3,948
o Decrease technical and program management support	-82
Subtotal	-8,187

Waste Management

o Continue low rank coal waste characterization and liner development at UNDEERC	+175
o Expand waste characterization and field monitoring of disposed wastes; complete sampling, geochemical and systems studies in FY 1990	+1,147
o Complete wastewater treatment R&D for western coal processing	-885
o Continue in-house waste characterization and program management support	+75
Subtotal	+512
FY 1991 Congressional Budget Request	$33,529

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Control Technology and Coal Preparation

A major goal of Fossil Energy is to provide environmentally superior technology for the generation of electrical and thermal energy, and for the production of fossil fuel-based chemicals and products for electric utility, industrial and commercial/residential markets. Several technology development programs are being pursued under this activity to achieve their goal. Consistent with this effort the functional organization of this activity forms five logical subactivities -- Coal Preparation, Flue Gas Cleanup, Gas Stream Cleanup, Waste Management, and Advanced Research. Coal Preparation is directed toward the development of advanced coal cleaning technologies that will reduce the ash and sulfur content of U.S. coal so that the product can be formulated into a high quality fuel that could replace oil and/or gas and reduce environmental emissions of suspected acid rain precursors from coal-fired power plants in both new and retrofit applications. Research is conducted in three broad areas: (1) physical treatment and cleaning; (2) chemical/biological pretreatment and cleaning; and (3) ancillary operations. Advanced physical techniques to remove inorganic sulfur are being developed to control emissions from pre-NSPS utility boilers. Methods to remove organic sulfur include chemical and biological treatment. Ancillary operations include coal drying and support the programs, by assuring that cost effective coal preparation systems are developed. Flue Gas Cleanup addresses the cost effective removal of pollution causing contaminants from fossil fuel-fired systems to meet current and projected environmental standards that could serve to limit the utilization of fossil fuels. Efforts will be focused on processes for the combined removal of NOx, SOx, including the copper oxide process; control of SO2 emissions from utilities by induct injection technology and other scrubbing techniques; NOx control by reburning and post combustion concepts; control of emissions from small scale boilers and control of fine particulate control technology. Gas Stream Cleanup develops technologies for removal of contaminants from gasifier and combustor process streams prior to utilization in advanced conversion systems being developed in other Fossil Energy programs. Generation of electrical and thermal energy and production of chemicals and other products for use in electric utility, industrial, and commercial/residential markets can, in the future, be accomplished through the use of environmentally superior cleanup technologies now being developed in the Gas Stream Cleanup program. System applications of current interest include PFB combustor turbines, integrated gasifier combined cycle (IGCC) turbines, direct coal-fueled turbines (DCFT), and fuel cells (FC). Gas Stream Cleanup activities focus towards development of a sorbent-based sulfur process, advanced particulate removal concepts utilizing ceramic filters for IGCC power generation systems in support of DOE's Clean Coal Program, advanced cleanup technologies for IGCC and PFB. Waste Management is a crosscutting program that focuses primarily on waste sampling and characterization from coal preparation and emerging technology wastes. The objective of this program is to ensure that wastes from emerging coal utilization technologies do not inhibit their commercialization. Advanced Research, generic and fundamental in nature, is conducted on processes used to separate constituents such as deleterious particulates and sulfur and nitrogen oxides in coal fuel streams before, during, and after combustion.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Control Technology and Coal Preparation, approximately 32% of the contracts are cost-shared and approximately 34 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Advanced Research	$1,774	$2,092	$1,659	-21
Coal Preparation	17,680	19,945	12,190	-39
Flue Gas Cleanup	16,375	16,826	8,603	-49
Gas Stream Cleanup	11,574	16,690	8,503	-49
Waste Management	1,524	2,062	2,574	+25
Total, Control Technology and Coal Preparation	$48,927	$57,615	$33,529	-42

B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Pittsburgh Energy Technology Center	$6,169	$6,446	$5,400	-16
Morgantown Energy Technology Center	$3,079	$3,857	$4,382	+14
Argonne National Laboratory	$920	$803	$650	-19
Ames National Laboratory	$1,240	$1,125	$0	-100
Lawrence Berkeley Laboratory	$480	$494	$400	-19
Oak Ridge National Laboratory	$700	$594	$200	-66
Idaho National Engineering Laboratory	$240	$0	$0	0

III. Activity Description: Control Technology and Coal Preparation

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research	Continue fundamental research on processes used to separate constituents in coal-based fuel streams including studies of comminution and the removal of mineral matter, sulfur and nitrogen compounds, alkalies and ash. ($1,739) (Westinghouse, ORNL, AVCO, SUNY, METC)	Increase generic research on acid rain precursors and their removal: Examine the surface properties of coal and coal minerals as related to the removal of sulfur and mineral matter by advanced comminution and separation processes; continue studies of SOx/NOx separation processes, fundamental studies of the effects of process variables on high temperature filtration processes. Includes in-house research performed at METC. ($2,071) (Westinghouse, ORNL, Battelle, AVCO, TBD)	Reduce fundamental research on processes used to separate constituents in coal-based fuel streams before, during and after combustion. Independent of specific systems but consistent with developments underway in other Fossil Energy programs, these studies focus upon communition and the removal of mineral matter, sulfur and nitrogen compounds, alkalies and other trace species, and ash during coal preparation and in combustion and post-combustion environments. ($1,642) (Acurex, Westinghouse, Univ. of Utah, Lehigh, ORNL)
	Fund technical and program management support. ($35)	Fund technical and program management support. ($21)	Fund technical and program management support. ($17)
	1,774	2,092	1,659

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Coal Preparation	Completed research on advanced methods of low rank coal beneficiation. ($323) (UNDEERC)	No activity. ($0)	No activity. ($0)
	Initiated research on coal drying and the effects on transportation of western coals. ($100) (WRI)	No activity. ($0)	No activity. ($0)
	Continued testing of Gravimelt integrated system. ($1,300) (TRW)	Complete testing of Gravimelt integrated system. ($1,974) (TRW)	No activity. ($0)
	Continued research and investigated advanced concepts for physical and chemical/biochemical coal cleaning. Completed preliminary studies of selective agglomeration and treating chars with halogens to remove sulfur and ash. Ongoing research included heavy media separation, new flotation techniques and biochemical approaches to removing organic sulfur. Continued supporting research on drying, fine grinding and handling fine coal of all ranks with engineering evaluations of new concepts operations. ($3,619). Continued research on new technologies for controlling emissions from pre-NSPS utility boilers ($4,580). (Total $8,199) (Arctech, UNDEERC, B&W, WRI, Amax, Burns & Roe, Battelle, INEL, Kaiser Engrs., U. of Calif., U. of Pittsburgh, Southern Co. Services, Aspen Tech.)	Issue competitive procurement on biochemical coal cleaning technologies. Initiate testing of selective coagulation coal beneficiation. Continue laboratory and bench-scale investigations of advanced physical coal cleaning and chemical/microbial concepts for organic sulfur removal. Continue supporting research in ancillary operations for all ranks of coal and support studies. ($2,253). Initiate bench-scale testing of advanced physical coal cleaning concepts at the PETC HI-BAY facility ($493). Continue research on selected technologies for controlling emissions from pre-NSPS utility boilers ($7,097). (Total $9,843) (TBD, Burns & Roe, Coal Tech. Corp., UNDEERC, VPI, Battelle, U. of Calif., U. of Pittsburgh, Kaiser Engrs., Southern Co. Services, Aspen Tech.)	Continue laboratory and bench-scale investigations of microbial concepts for pyrite and organic sulfur removal. Continue supporting research in ancillary operations for all ranks of coal and support studies. Initiate bench scale investigations of advanced chemical techniques for producing clean coal products capable of displacing oil and gas. ($1,668). Continue research on selected technologies for controlling emissions from pre-NSPS utility boilers (CCRI) to achieve the planned 1992 completion schedule (cost-sharing: TBD; historically 18% ind./82% FE) ($7,900). (Total $9,568) (TBD, U. of Calif., U. of Pittsburgh, Coal Tech. Corp., Kaiser Engrs., Southern Co. Services, Burns & Roe)
	Continued DOE/EPRI testing of most promising advanced concepts for fine coal cleaning and completed testing of another concept ($2,000). Completed cooperative research on agglomeration and bioprocessing ($150). (Total $2,150) (Bechtel, PTI, EPRI, VPI)	Complete DOE/EPRI testing of most promising advanced concepts for fine coal cleaning. ($2,639) (Bechtel, TBD)	No activity. ($0)

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Coal Preparation (cont'd)	Completed research activities at SIU to 12/31/89. SIU received $1,500 as part of a Cooperative Agreement with the State of Illinois as described below. ($0)	No activity. ($0)	No activity. ($0)
	Continued Cooperative Agreement for a high sulfur coal research program with SIU. ($1,500)	Complete high sulfur coal research under a cooperative agreement with the State of Illinois. ($1,481)	No activity. ($0)
	Continued coal cleaning research activities at Ames Lab. ($1,140)	Complete coal cleaning research activities at Ames Lab. ($1,125)	No activity. ($0)
	Continued in-house research at laboratory scale to investigate and evaluate advanced physical and chemical coal cleaning concepts. Continued organic sulfur chemistry. Maintained a data base, characterized feed coal and coal cleaning products, and studied the role of surface functional groups in coal treatment. ($2,734) (PETC)	Continue in-house research at laboratory scale and bench scale to investigate and evaluate advanced physical, chemical, and microbiological coal cleaning concepts. Continue organic sulfur chemistry. Maintain a data base, characterize feed coal and coal cleaning products, and study the role of surface functional groups in advanced physical beneficiation of ultrafine coal. ($2,684) (PETC)	Continue in-house research at bench scale to investigate advanced physical and chemical coal cleaning concepts. Continue organic sulfur chemistry. Maintain a data base, characterize feed coal and cleaned coal products. ($2,500) (PETC)
	Continued technical and program management support ($199). Provided funding for AR&TD coal export activity ($35). (Total $234)	Continue technical and program management support ($160). Provide funding for a study at ANL ($39). (Total $199)	Continue technical and program management support. ($122)
	17,680	19,945	12,190
Flue Gas Cleanup	Completed development of advanced SOx/NOx/particulate control technology. ($297) (UNDEERC)	No activity. ($0)	No activity. ($0)

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Flue Gas Cleanup (cont'd)	Continued research for TUNG scrubbing process. Participated in EPRI program of emissions control for electric power generating stations burning high-sulfur coals. Continued in-house research in spray dryer and in-duct technology development. Continued systems integration studies for low cost duct injection for moderate and high sulfur coals. Total of $6,893 included $1,100 in prior year funds from the Glo-Klen project. ($5,793) (EPRI, Bechtel, Radian, Gilbert Commonwealth, United Engineers & Constructors, PETC)	Continue research for TUNG scrubbing process. Participate in EPRI program of emissions control for electric power generating stations burning high-sulfur coals. Continue in-house research in spray dryer and in-duct technology development. Continue systems integration studies for low cost duct injection for moderate and high sulfur coals. ($7,087) (Raycon, EPRI, Radian, Gilbert Commonwealth, United Engineers & Constructors, PETC)	Continue research for TUNG scrubbing process. Participate in EPRI program of emissions control for electric power generating stations burning high-sulfur coals. Continue in-house research in spray dryer and in-duct technology development. Continue systems integration studies for low cost duct injection for moderate and high sulfur coals. ($5,029) (Raycon, EPRI, Radian, Gilbert Commonwealth, United Engineers & Constructors, PETC)
	Continued research on advanced NOx/SOx chemistry and systems modeling. Conducted technical and economic evaluation of processes for the most promising concepts scaleup. ($2,935) (ANL, LBL, Burns & Roe, PETC)	Continue research on advanced NOx/SOx chemistry, processes and systems modeling. Initiate research on the development of advanced concepts for by-product recovery and conversion to stable forms. Conduct data base support and technical and economic evaluation of processes. ($2,4 3) (ANL, LBL, Burns & Roe, PETC, TBD)	Continue research on advanced NOx/SOx chemistry, processes, systems modeling, and by-product recovery. Conduct data base support and technical and economic evaluation of processes. ($1,040) (TBD, ANL, LBL, Burns & Roe, PETC)
	Continued advanced research on reburning, catalytic, and post combustion concepts for NOx emissions control. ($1,114) (U. of Arizona, Louisiana St. U., PETC, TBD)	Continue advanced research on reburning, catalytic, and post combustion concepts for NOx emissions control totaling $2,815 which includes $302 in prior year funds. ($2,513) (ANL, LBL, PETC, TBD)	Continue advanced research on reburning, catalytic, and post combustion control concepts. Continue advanced concept development at larger scale. ($1,100) (ANL, LBL, PETC, TBD)
	Initiated procurement for continued development of advanced separation technology for SOx/NOx control. ($250) (Stevens Inst., TBD, PETC)	Continue development of advanced separation technology for SOx/NOx control. ($834) (ANL, LBL, PETC, TBD)	Continue development of advanced separation technology for SOx/NOx control. ($200) (TBD)
	Continued fluidized-bed copper oxide POC evaluation and technology development. Continued moving-bed process evaluation. ($2,212) (UOP, U. of Denver, PETC)	Continue moving-bed copper oxide process evaluation for simultaneous SO2, NOx, and particulate control. ($494) (PETC)	Complete copper oxide process evaluation using prior year funds. ($0) (PETC)

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Flue Gas Cleanup (cont'd)	Continued research on most promising advanced flue gas processes for removal of SO2 and NOx at larger scale totaling $2,691 which included $691 in prior year funds. ($2,000) (MK-Ferguson)	Continue research on most promising advanced flue gas processes at larger scale. ($2,412) (MK-Ferguson, Research Cottrell)	Continue work on two large scale advanced flue gas process contracts awarded in FY 1989 using prior year funds. ($0)
	Continued research on particulate characterization, control technology improvement, modeling and engineering design bases. Initiated larger scale tests of fine particulate control technology. ($1,000) (UNDEERC, SRI, Cottrell, EER, ETS)	Continue larger scale tests of fine particulate control technology. ($562) (SRI, TBD)	Continue larger scale tests of fine particulate control technology. ($483) (TBD)
	Continued research on enhanced mass transfer effect on sorbent utilization for duct injection. ($500) (Acurex, EER)	Continue contracts funded in FY 1989 for research on enhanced mass transfer effect on sorbent utilization for duct injection using prior year funds. ($0)	Complete FY 1989 contract on enhanced mass transfer effect on sorbent utilization. ($31) (Acurex)
	Continued research on emissions control from small scale boilers using $850 in prior year funds. ($0)	Continue research on emissions control from small scale boilers. ($328) (PETC, Avco)	Continue research on emissions control from small scale boilers. ($504) (Tecogen, A.D. Little, PETC)
	No activity. ($0)	No activity. ($0)	Initiate development of CO2 control technology. ($50) (TBD)
	Continued technical and program management support ($259). Provided funding for AA&TD coal export activity totaling $35 which included $20 in prior year funds ($15). (Total $274)	Continue technical and program management support. ($168)	Continue technical and program management support. ($86)
	16,375	16,826	8,603
Gas Stream Cleanup	PRESSURIZED FLUIDIZED-BED COMB. (PFBC): Continued long-term durability test of ceramic cross flow filter using prior year funds. Initiated particle control activities for PFBC to support slipstream testing at the TIDD facility. ($246) (Westinghouse, KOH, Southern Res. Inst.)	Complete long-term durability test of cross flow filter. Prepare for TIDD sidestream testing. ($395) (Westinghouse, Southern Res. Inst.)	Assess feasibility of particle control and conduct follow-on research on barrier technical issues for particle control. ($838) (Battelle Columbus, METC, Southern Res. Inst.)

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Gas Stream Cleanup (cont'd)	**INTEGRATED GASIF. COMBINED CYCLE (IGCC):** Initiated conceptual design, with industry, of an integrated gasifier PDU for particle removal testing. Continued durability and subpilot scale evaluations for cross flow filter. Continued testing sulfur control devices at bench scale. Continued conceptual design of integrated fixed-bed gasifier hot gas cleanup test facility at METC. Continued development of durable novel sorbents and sorbent reactors. Total of $5,634 included $1,858 in prior year funds. ($3,776) (UNDEERC, Res. Triangle Inst., Westinghouse, Southern Co. Services, METC)	Continue conceptual design of the joint DOE/industry particle control test facility ($4,935). Complete durability and subpilot scale evaluations for cross flow filter. Continue development of novel sorbents and sorbent reactors. Continue laboratory, sidestream, and bench-scale tests of novel sorbents and enhanced sorbents. Continue desulfurization system design for a gasifier test facility at METC. ($2,936). Total of $11,477 includes $3,606 in prior year funds. (Total $7,871) (Westinghouse, GE, Res. Triangle Inst., Southern Co. Services, METC)	Carry out sidestream and bench-scale testing of novel and enhanced sulfur sorbents and cleanup systems. Continue construction of a novel fluidized bed cleanup system at the gasifier test facility. Update systems analyses. Continue development and testing of novel sulfur recovery concept. Continue design of joint project with industry for a particulate control test facility. ($3,700) (GE, Res. Triangle Inst., Southern Co. Services, METC, TBD)
	DIRECT COAL-FIRED TURBINES (DCFT): Continued subpilot scale testing of acoustic agglomeration. Continued limited development of integrated low emissions concepts. Conducted pressurized combustion tests on sulfur/particle control concepts. Total of $2,877 included $666 in prior year funds. ($2,211) (Westinghouse, ANL, Heliquip, Cottrell, UNDEERC, Solar Turbines, METC)	Continue development of acoustic agglomeration and combined sulfur/particulate removal ($1,209). Design cleanup equipment for METC advanced combustor ($592). Continue integrated low emission cleanup development ($459). (Total $2,260) (Westinghouse, Cottrell, Solar Turbines, MTCI, Acurex, Southern Res. Inst., METC, TBD)	Continue development of acoustic enhanced combined sulfur/particulate removal. Carryout testing of cleanup equipment for METC advanced combustor. Update systems analysis with advanced cleanup techniques. Carry out granular bed filter tests and begin long term tests of selected concepts. ($2,300) (METC, MTCI, TBD)
	SUPPORTING R&D: Continued in-house system analysis, gas stream characterization, and instrumentation development. Accelerated ceramic membrane separation R&D. ($2,097) (Airesearch, Alcoa, Acurex, SRI Int'l, ORNL, ANL, AGL, METC)	Continue in-house system analysis and ceramic membrane development support. Continue catalytic membrane development for high-temperature gas separations. ($2,049) (Airesearch, Alcoa, SRI Int'l, Battelle, Air Products & Chemicals, ORNL, AGL, METC)	Perform in-house lab-scale testing of ceramic membranes and update advanced system unit costing. Establish feasibility of advanced ceramic membrane concepts. Assess sample liner materials for alkali monitoring. Continue development and testing of materials for ceramic candle and cross-flow filters. Conduct follow-on testing of novel particle control concepts. ($1,410) (ANL, Acurex, METC, TBD)
	CALDERON: Initiated construction of PDU. ($3,069)	Complete PDU construction with prior year funding. Provide for extended operation of the Calderon facility with a 20% cost-sharing by the project sponsors. ($3,948)	No activity. ($0)

III. Activity Description: Control Technology and Coal Preparation (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Gas Stream Cleanup (cont'd)	HEADQUARTERS SUPPORT: Continued technical and program management support ($160). Provided funding for AR&TD coal expert activity ($15). (Total $175)	Continue technical and program management support. ($167)	Continue technical and program management support. ($85)
	11,576	16,690	8,503
Waste Management	Continued characterizing low rank coal waste and developing waste based liner materials. ($125) (UNDEERC)	No activity. ($0)	Perform characterization of low rank coal waste and waste based liner materials development. ($175) (UNDEERC)
	No activity. ($0)	Initiate, on a cost-shared basis, wastewater treatment R&D applicable to processing of several western coals totaling $1,739 which includes $854 in prior year funds. ($885) (State of Wyoming)	Complete wastewater treatment R&D applicable to western coal processing with FY 1990 funds. ($0) (State of Wyoming)
	Continued contracted efforts for sampling and characterization of organics and metals in solid wastes. Initiated geochemical and geotechnical analyses of wastes. Continued field monitoring of disposed wastes (multiple sites, including Clean Coal) to observe subsurface environmental effects. ($951). Continued study of waste management systems, including utilization and disposal ($200). (Total $1,151) (Radian, Baker, Universal Fuel Dev.)	Continue field monitoring of disposed wastes (multiple sites, including Clean Coal) to observe subsurface environmental efforts ($753). Continue geochemical and geotechnical analysis of wastes from advanced coal processes and complete study of waste management systems ($223). (Total $976) (Radian, Baker, Universal Fuel Dev., TBD)	Expand field monitoring of disposed waste to include mine disposal and additional Clean Coal waste sites to observe subsurface environmental effects ($1,723). Continue laboratory characterization of advanced technology wastes to assess risk and predict environmental fate ($400). (Total $2,123) (Radian, TBD)
	Continued in-house characterization of wastes and maintenance of waste-related data base. ($220) (METC)	Continue in-house characterization of wastes and maintenance of waste-related data base. ($180) (METC)	Continue in-house characterization of wastes and maintenance of waste-related data base. ($250) (METC)
	Continued technical and program management support. ($28)	Continue technical and program management support. ($21)	Continue technical and program management support. ($26)
	1,524	2,062	2,574
	48,927	57,615	33,529

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Advanced Research and Technology Development

FY 1990 Appropriation	$26,390
Coal Utilization Science - Decrease fundamental coal research on fundamental combustion processes and contaminant formation and removal	-838
Materials and Components	
o Materials: Decrease research on austenitic alloys, new materials processes, corrosion-erosion, and technology transfer	-291
o Components: Decrease research in ceramic to metal seals, high temperature bulk values and multiphase flow fundamentals	-1,156
Subtotal	-1,447
Technology Crosscut	
o Environmental Activities: Decrease funding due to phasedown of NAPAP activities	-193
o Technical and Economical Analyses: Increase efforts analyzing the strategic benefits of advanced fossil fuel technologies	+310
o International Program Support: Increase support of international collaborative research activities and fund selected IEA studies	+287
o Coal Technology Export: Increase funding for prefeasibility and feasibility studies for clean coal technology projects abroad, and other support activities for U.S. industry export opportunities	+1,694
o Instrumentation and Diagnostics: Continue on-going instrumentation research, including work on "expert" instrumentation and initiate research on an instrument to measure the opacity of gas downstream of a turbine barrier filter	+234

o Bioprocessing of Coal: Expand research on coal bioprocessing and coal desulfurization	+365
Subtotal	+2,697
University/National Laboratory Coal Research	
o University Coal Research: Decrease support to Historically Black Colleges and Universities	-314
FY 1991 Congressional Budget Request	$26,488

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Advanced Research and Technology Development

The Advanced Research and Technology Development (AR&TD) Program is directed toward the scientific and technical areas that underlie the development of all fossil energy technologies. The AR&TD coal science program focuses on mission-oriented fundamental research to increase the understanding of the mechanisms of coal combustion and conversion. Activities include generic studies of materials and components, investigations of instrumentation concepts in environments associated with advanced coal technologies, and exploratory research and innovation for major advances to enhance the U.S. capability to use coal. AR&TD differs from the Fossil Energy line programs; the latter have an end-item technology development orientation while AR&TD's mission is to pursue generic research in support of all Fossil Energy coal line programs. AR&TD addresses fundamental scientific and engineering problems that are barriers to Fossil Energy technological goals. The AR&TD program is unique in that it is directed to specific scientific and technical areas which are closely connected to long-range Fossil Energy objectives. The AR&TD International Activity program generally enhances existing FE programs and projects and provides both financial and technological leverage in those selected areas where it has been determined that the U.S. receives at least as well as it gives on a quid pro quo basis.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Advanced Research and Technology Development, approximately 41% of the contracts are cost-shared and approximately 24 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Coal Utilization Science	$3,691	$4,121	$3,283	-20
Materials and Components:				
Components	2,024	2,511	1,355	-46
Materials	6,467	6,382	6,091	-5
Subtotal, Materials and Components	8,491	8,893	7,446	-16
Technology Crosscut:				
Environmental Activities	2,602	2,433	2,240	-8
Technical and Economic Analyses	2,033	1,822	2,132	+17
International Program Support	737	713	1,000	+40
Coal Technology Export	0	239	1,933	+709
Instrumentation and Diagnostics	1,490	1,494	1,728	+16
Bioprocessing of Coal	1,017	1,000	1,365	+37
Subtotal, Technology Crosscut	7,879	7,701	10,398	+35
University/National Laboratory Coal Research:				
University Coal Research	5,503	5,675	5,361	-6
Total, Advanced Research and Technology Development	$25,564	$26,390	$26,488	0

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Argonne National Laboratory	$3,441	$ 2,595	$2,439	-6
Oak Ridge National Laboratory	$4,588	$4,556	$4,115	-10
Brookhaven National Laboratory	$8	$160	$0	-100
Ames National Laboratory	$60	$74	$49	-34
Lawrence Berkeley Laboratory	$250	$247	$200	-19
Pacific Northwest Laboratory	$300	$396	$400	+1
Los Alamos National Laboratory	$380	$296	$260	-12
Sandia National Laboratory	$975	$1,170	$1,000	-15
Idaho National Engineering Laboratory	$1,597	$1,508	$1,876	+24
Lawrence Livermore National Laboratory	$455	$390	$200	-49
Morgantown Energy Technology Center	$1,310	$1,331	$1,266	-5
Pittsburgh Energy Technology Center	$1,230	$459	$600	+31

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
Coal Utilization Science	Reduce investigations of the formation, transformation and characterization of fuel and combustion product species; coal devolatilization, pyrolysis and volatile and char oxidation; and radiant heat transfer. Includes in-house research performed by METC and PETC and $258 for work performed at UNDEERC. ($3,617) (AMES, SNL)	Continue generic studies of coal properties and the underlying chemistry and physics of coal utilization processes. Includes research on surface science pertaining to coal beneficiation; combustion science pertinent to boilers, heaters, heat engines, gas turbines and fluidized-beds; separation science pertinent to SOx/NOx, particulate and trace element pollutant removal; and waste characterization and $592 for work at UNDEERC. ($4,080) (METC, PETC, UNDEERC, SNL)	Continue fundamental research on the properties of constituents and the nature of reactions in coal utilization processes. Independent of specific devices or processes, these generic studies examine the underlying physics, chemistry, and thermodynamics of phenomena across a broad spectrum of parameters including temperature, pressure, particle size distribution and coal rank. Investigations are made of the formation, transformation and characterization of fuel and combustion product species; coal devolatilization, pyrolysis and volatile and char oxidation; and radiant heat transfer. Studies are stimulated and guided by needs for fundamental research revealed in other Fossil Energy coal research and development projects. ($3,250) (SNL, PNL, ANL, ARL, BYU, UNDEERC)
	Fund technical and program management support. ($74)	Fund technical and program management support. ($41)	Fund technical and program management support. ($33)
	3,691	4,121	3,283

III. Activity Description: Advanced Research and Technology Development (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Materials	Continue research on advanced steam cycle alloys, mechanisms of erosion and corrosion, ceramics composites, advanced aluminides, superconducting oxides, oxide protective scales, microwave sintering, ceramic membranes, solid state electrolyte materials, electro spark coatings and ceramic catalyst supports. ($6,338) (ORNL, PNL, LBL, ANL, SNL, INEL, HEDL, LANL)	Continue research on structural ceramic composites, microwave sintering, advanced austenitic alloys, advanced aluminides, ceramic membranes, ceramic catalyst supports, mechanisms of erosion and corrosion, solid state electrolyte materials, and coatings and claddings. ($6,318) (ORNL, PNL, LBL, ANL, LANL, INEL, SNL, WMC)	Continue research on structural ceramic composites, advanced austenitic alloys, ceramic filters, iron aluminides, coatings and claddings, ceramic membranes, ceramic catalyst supports, mechanisms of erosion and corrosion, solid state electrolyte materials, technology transfer and new ceramic materials processes. (ORNL, PNL, LBL, ANL, INEL, SNL, LANL, WMC) ($6,030)
	Fund technical and program management support. ($129)	Fund technical and program management support. ($64)	Fund technical and program management support. ($61)
	6,467	6,382	6,091
Components	Continue development of alternate flow concepts, low pressure turbine flow control and nozzle development. Initiate fluidic fuel injection for diesels; and high temperature tube sheet. ($572) (ORNL, SwRI, Adiabatics, Inc.)	Continue activities to develop novel components for advanced coal technologies. Major thrusts are high temperature, low pressure differential gas turbine fuel control devices for IGCC systems, fluidic fuel injection for diesels, alternate flow control concepts, a novel ash handling system, high temperature tube sheet and the transfer of electroslag casting technology to industry. ($853) (TBD, ORNL, UND)	Continue, at a reduced level, activities to develop novel components for advanced coal conversion technologies. Major thrusts are testing of selected differential pressure gas turbine fuel control devices and high temperature tube sheet for barrier filters. Conduct development of high temperature seals for sealing ceramics to metal for high temperature gas separation and clean-up, membrane applications and development of high temperature and high pressure block valves for IGCC applications. ($547) (ORNL, TBD)
	Continue fundamental research on solids transport. This consists of theoretical analysis of bulk flow, limited modeling and experimentation in solids-liquid flow, and preliminary research in dense phase pneumatic transport of solids. ($1,411) (LLL, PETC, ANL)	Continue fundamental research on solids transport. Continue limited theoretical analysis/modeling and selected multiphase flow research in solids-liquid and solids-gas flows. ($1,633) (LLL, ANL, PETC)	Continue, at a reduced level, fundamental research on solid transport to include research on the Granular Flow Advanced Research Objective (GFARO) and exploratory research on multiphases flow. ($794) (LLNL, ANL)
	Fund technical and program management support. ($41)	Fund technical and program management support. ($25)	Fund technical and program management support. ($14)
	2,024	2,511	1,355

III. Activity Description: Advanced Research and Technology Development (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Environmental Activities	Continue analyses of issues associated with air and water quality, solid waste disposal, and toxic substances. Continue support of occupational health, quality assurance, reliability, and safety compliance services. ($1,632) (ANL, ORNL, SNL)	Continue analyses of issues associated with air and water quality, solid waste disposal, and toxic substances. Continue support of occupational health, quality assurance, reliability, and safety compliance services. ($1,624) (ANL, ORNL, TBD)	Continue analyses of issues associated with air and water quality, solid waste disposal, and toxic substances. Continue emission trends and forecast studies. Continue support of occupational health, quality assurance, reliability, and safety compliance services. ($1,940) (ANL, ORNL, TBD)
	Continue research conducted under NAPAP with emphasis on quality assurance of data and analytical tools. ($970) (ANL, PEI)	Continue research conducted under NAPAP with emphasis on quality assurance of data and analytical tools. ($809) (ANL, TBD, PEI)	Complete NAPAP related research. ($300) (ANL, TBD, PEI)
	2,602	2,433	2,240
Technical and Economic Analyses	Continue studies supporting multi-year planning, FE strategy and program formulation; conduct contract studies on issues that crosscut FE programs, including strategic benefits of new fossil fuel technology; fund IEA/Coal Research Service. Provide funding for AR&TD coal export activity. ($2,033) (IEA/Coal Research Service, ANL, ICF)	Continue studies supporting multi-year planning, FE strategy and program formulation; conduct contract studies on issues that crosscut FE programs, including strategic benefits of new fossil fuel technology; provide technical and economic analytical support. ($1,822) (ANL, ICF, Resource Dynamics)	Continue studies supporting multi-year planning, FE strategy and program formulation; conduct contract studies on issues that crosscut FE programs, including strategic benefits of new fossil fuel technology; provide technical and economic analytical support. $180 for planning studies at UNDEERC. ($2,132) (ANL, ICF, Resource Dynamics, TBD)
	2,033	1,822	2,132
International Program Support	Conduct analyses, studies and technical evaluations concerning unilateral and bilateral agreement activities. ($387) Support FE international collaborative research activities ($350). (Total $737) (ANL, Joint Venture Organization)	Continue to conduct analyses, studies and technical evaluations of the IEA and bilateral agreement activities. ($300) (TBD) Support international collaborative research activities ($413). (Total $713) (ANL, JVOI, TBD)	Continue to conduct analyses, studies and technical evaluations of ongoing and planned bilateral and multilateral activities. Fund selected activities of the International Energy Agency. ($1,000) (IEA/Coal Research Service, TBD)
	737	713	1,000

III. Activity Description: Advanced Research and Technology Development (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Coal Technology Export	Provide support for coal and technology export linkage programs promoting private initiative in commercialization of FE R&D technology totalling $750 provided in various activities. ($0) (TBD) Conduct analysis of the use of specific coal based technologies in developing countries with $300 from prior years. Fund $1,300 from prior year funding for the joint U.S./Italy project to demonstrate that superclean coal water slurries can be effectively used in oil-burning boilers. ($0)	Provide support for coal and coal technology programs and promotion initiatives including project identification and prefeasibility. (Total $239) (Joint Venture Organization, TRBI)	Provide support for coal and coal technology export opportunities and promotion initiatives. ($1,933)
	0	239	1,933
Instrumentation and Diagnostics	Continue investigation of fiber optic sensor combustion probes and novel spectroscopic hot gas stream analysis techniques. Includes in-house work performed at METC. ($1,460) (PNL, SNL, LANL, ANL)	Investigate in-situ instruments and develop spectroscopic techniques to identify molecular species and to provide process control in hot gas streams. Characterize coal liquid slurry atomization and develop novel viscocity measurement methods for coal slurry based combustion systems. Investigate fiber optics technology, explore instrumentation techniques for densely loaded streams, and provide crosscutting instrumentation system information. Includes in-house research performed at METC. ($1,479) (SNL, ANL, LANL)	Continue studies to measure acoustic parameters of fluids in multiphase flow, and research on laser-based chemical species analysis, particle species and size determinations. Continue sensor development for the harsh environments of coal conversion processes. Increase study of "expert" instrumentation system applications to coal utilization. Continue coordinating activities for all Fossil Energy instrument-related projects. Conduct research on an instrument to measure the opacity of gas downstream of a barier filter used to control erosion of turbine components. ($1,711) (ANL, LANL, SNL, VPI)
	Fund technical and program management support. ($30)	Fund technical and program management support. ($15)	Fund technical and program management support. ($17)
	1,490	1,494	1,728

III. Activity Description: Advanced Research and Technology Development (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Bioprocessing of Coal	Continue fundamental research in the bioprocessing of coal to gain an improved understanding of the reactions occurring when coal is desulfurized or converted to gases or liquids by biological means. ($997) (INEL)	Continue fundamental research on bioprocessing of coal, including mechanisms of desulfurization, additional testing and characterization of organisms for biological treatment of coal and fundamental research related to new reactor concepts for bioprocessing of coal. ($990) (INEL)	Expend research on coal bioprocesseng, including work on: identification of more effective microbes and enzyme systems for bioconversion of coal, bioprocess engineering and related molecular genetics, and evaluation of thermophiles (i.e., organisms that function between 45 degrees C) for removal of sulfur, nitrogen and ash from coal. ($1,351) (INEL)
	Fund technical and program management support. ($20)	Fund technical and program management support. ($10)	Fund technical and program management support. ($14)
	1,017	1000	1,365
University Coal Research	Support approximately 30 new grants at universities for research on the ongoing topics of coal science, coal surface science, reaction chemistry, advanced process concepts, thermodynamics, engineering fundamentals and environmental science; continue encouraging collaboration between university and industrial researchers. ($5,393) (Various Universities)	Support approximately 28 new grants at U.S. colleges and universities for basic research on coal science, coal surface science, reaction chemistry, advanced process concepts, engineering fundamentals and thermodynamics, environmental science and high temperature phenomena. Emphasize high payoff, long-term research. ($5,124) (TBD)	Support approximately 26 new grants at U.S. colleges and universities for basic research on coal science, coal surface science, reaction chemistry, advanced process concepts, engineering fundamentals and thermodynamics, environmental science and high temperature phenomena. Emphasize high payoff, long-term research with student involvement. Based upon historical data, it is anticipated that the universities will continue to cost-share in these research projects. ($4,841) (TBD)
	Previously funded under Headquarters Program Direction and Management	Support 3-5 competitively determined research grants at Historically Black Colleges and Universities (HBCUs) and existing HBCU facility and student training activities. ($494) (TBD)	Support 3-5 competitively determined research grants at Historically Black Colleges and Universities (HBCUs) and existing HBCU facility and student training activities. ($467) (TBD)
	Fund technical and program management support. ($110)	Fund technical and management support. ($57)	Fund technical and management support. ($53)
	5,503	5,675	5,361
	25,564	26,390	26,488

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Coal Liquefaction

FY 1990 Appropriation	$34,526
Advanced Research	
o Decrease research on fundamental understanding of coal liquefaction processes, novel liquefaction concepts, research on biological approaches to coal liquefaction and novel catalyst concepts	-3,746
Indirect Liquefaction	
o Complete operation of Liquid Phase Methanol pilot facility	-1,777
o Eliminate finding for generic bench scale activities at PETC	-1,480
o Reduce funding for research on new catalysts/reactor systems for the production of alcohol and hydrocarbon fuels. Continue technical and program management support	-2,797
Subtotal	-6,054
Direct Liquefaction	
o Reduce funding for PETC in-house research and for process research in liquefaction and coprocessing	-4,655
o Complete operation of the Wilsonville facility	-8,488
Subtotal	-13,143
Support Studies and Engineering Evaluations	
o Eliminate baseline design studies. Continue technical and program support	-713

o Continue solvent characterization research, novel catalyst research, process studies and technical and program support	-247
Subtotal	-960
FY 1991 Congressional Budget Request	$10,623

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Coal Liquefaction

The need for liquid fuels is forecast to be a persistent and critical element of this nation's energy future through this century. The Coal Liquefaction program supports basic and applied research to develop the scientific and engineering knowledge base with which industry can bring economically competitive and environmentally acceptable advanced technology for the manufacture of synthetic liquid fuels from coal into the marketplace when needed. Coal liquefaction produces a complete spectrum of liquid fuels which will be utilized in the existing infrastructure. The Department's efforts are focused upon the two different and distinct approaches to producing liquid fuels from coal, direct liquefaction, and indirect liquefaction. Direct liquefaction processes convert the complex organic chemical structures found in coal directly to liquid components by hydrogenation. Indirect liquefaction involves coal gasification to produce synthesis gas (a mixture of CO + H2) followed by the catalytic conversion of the synthesis gas to liquids. Each of these approaches has unique characteristics that make it a candidate for commercial development when market conditions are appropriate. The program includes an advanced research activity where fundamental research is conducted on novel coal liquefaction concepts and efforts to better understand the basic mechanisms of coal liquefaction. Also, support studies and engineering evaluations are conducted to guide the research and development efforts.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Coal Liquefaction, approximately 38% of the contracts are cost-shared and approximately 17 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Advanced Research	$6,902	$6,636	$2,890	-56
Indirect Liquefaction	6,580	8,475	2,421	-71
Direct Liquefaction	17,333	17,680	4,537	-74
Support Studies/Engineering Evaluations	1,574	1,735	775	-55
Total, Coal Liquefaction	$32,389	$34,526	$10,623	-69

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Oak Ridge National Laboratory	$300	$296	$150	-49
Sandia National Laboratory	$2,308	$2,789	$1,198	-57
Pacific Northwest Laboratory	$150	$222	$100	-55
Pittsburgh Energy Technology Center	$2,653	$4,128	$2,157	-48
Wilsonville Advanced Coal Liquefaction Facility	$8,400	$8,488	$0	-100
LaPorte Liquid Phase Methanol Facility	$755	$1,777	$0	-100

III. Activity Description: Coal Liquefaction (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research	Increase exploratory efforts on novel coal liquefaction processes, including exploratory research on methods for solubilization of coal under mild conditions of temperature, pressure and/or reaction time. ($1,400)	Continue, at a reduced level of effort, exploratory work on novel concepts for direct liquefaction of coal including feasibility of employing ultrasonics for coal-solvent activation and liquefaction of beneficiated coals. ($1,254)	Continue exploratory research on novel concepts for coal liquefaction, including pretreatment of coal to enhance coal reactivity for liquefaction. ($850) (Sandia, TBD)
	Continue research to improve the understanding of coal liquefaction including: investigation of hydrogen utilization during coal liquefaction, use of high temperature spectroscopy to elucidate the mechanisms of coal liquefaction and examination of ways in which molecules of different coals react with other molecules during the liquefaction process. Continue support of Coal Sample Bank/Data Bank and Consortium for Fossil Fuel Liquefaction Science. ($2,470) (PETC, UNDEERC)	Continue research to improve understanding of coal liquefaction including coal-petroleum coprocessing, exploratory work on coal chemical structure and preconversion transformations in coal. Continue support for Consortium for Fossil Fuel Liquefaction Science and Coal Sample Bank/Data Base activities. ($2,781) (PETC, UNDEERC)	Continue research to improve understanding of coal liquefaction, including development of a method for measuring retrograde reactions that occur during liquefaction processes. Continue support for Coal Sample Bank/Data Base activities. ($900) (Penn State University, TBD)
	Increase research on biological approaches to coal liquefaction. Includes work performed by ORNL and PNL. ($958)	Continue work on biological approaches to coal liquefaction with emphasis on biotransformation of coal to hydrocarbons or alcohols ($971) (ORNL, PNL)	Continue, at a reduced level effort, research on biological approaches to coal liquefaction, including investigation of enzyme systems. ($386) (ORNL, TBD)
	Increase research on novel catalytic approaches to coal liquefaction, including use of computer assisted design for tailored coal liquefaction catalysts. Includes work performed by national laboratories. ($1,521) (SNL)	Continue research on novel catalysts for coal liquefaction including disposable and highly dispersed catalysts. ($1,564) (SNL)	Continue, at a reduced level of effort, research on novel catalytic approaches to coal liquefaction, including use of materials with ion exchange capability for improved catalyst dispersion. ($725) (Sandia, TBD)
	Continue at a reduced level of effort, research on the physical, chemical and thermodynamic properties of fossil fuel liquids. Includes work performed at NIPER. ($415)	Conclude research on the physical, chemical and thermodynamic properties of fossil fuels. ($0)	No activity. ($0)
	Fund technical and program management support. ($138)	Fund technical and program management support. ($66)	Continue technical and program management support. ($29)
	6,902	6,636	2,890

III. Activity Description: Coal Liquefaction (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Indirect Liquefaction	Continue operation and related research on Liquid Phase Methanol (LaPorte, TX) with prior year funding. ($0) Included engineering design modifications to improve facility operation. ($755) Air Products)	Implement unit modifications and operate the LaPorte pilot facility in a modified methanol mode. ($1,777) (Air Products)	No activity. ($0)
	Continue PETC in-house research including generic bench scale unit. Maintain existing laboratory research with industry and universities on alcohol and hydrocarbon fuel process concepts ($3,300). Conduct process research efforts on olefins, catalysts, and novel reactor systems ($2,435). (Total $5,735) (PETC, SNL, Amoco Oil Co.)	Continue PETC in-house research including generic bench scale unit ($2,742). Maintain ongoing laboratory process and catalyst research with industry and universities on alcohol and hydrocarbon fuels ($2,045). Conduct work on advanced processes and catalysts ($1,851). (Total $6,638) (PETC, SNL, Amoco, UOP, Air Products, TBD)	Continue PETC in-house F-T research ($400). Maintain existing laboratory research with industry on oxygenate and hydrocarbon fuel process concepts and continue novel catalyst research ($1,997). (Total $2,397) (PETC, Sandia, TBD)
	Fund technical and program management support ($85). Provide funding for AR&TD coal export activity ($5). (Total $90)	Fund technical and program management support. ($60)	Fund technical and program management support. ($24)
	6,580	8,475	2,421
Direct Liquefaction	Expand bench and laboratory scale research in coprocessing, staged liquefaction, and generic process research ($5,952). Continue PETC in-house research including generic bench scale activities ($2,475) Complete low rank coal research at UNDEERC ($400). (Total $8,827) (PETC, HRI, UOP, UNDEERC, TBD)	Expand bench and laboratory scale research in coprocessing, staged liquefaction and related process research including fundamental thermodynamics research ($5,214). Initiate studies on advanced process concepts ($986). Continue PETC in-house research, including generic bench-scale activities ($2,864). (Total $9,064) (PETC, SNL, HRI, UOP, Amoco, Consol, SRI, NIPER, Auburn Univ., Chicago Univ., CBN, TBD)	Continue existing exploratory research in coprocessing ($367). Maintain limited research on staged catalytic liquefaction ($1,543). Continue limited bench scale coprocessing ($750). Conduct limited research on advanced process concepts ($802). Continue PETC in-house research at reduced levels ($1,030). (Total $4,492). (PETC, SNL, TBD)
	Continue operation of the Wilsonville Coal Liquefaction Facility. ($8,400) (Southern Company)	Complete operation of the Wilsonville Coal Liquefaction Facility. ($8,488) (Southern Company)	No activity. ($0)
	Fund technical and program management support ($96). Provide funding for AR&TD coal export activity ($10). (Total $106)	Fund technical and program management support. ($128)	Fund technical and program management support. ($45)
	17,333	17,680	4,537

III. Activity Description: Coal Liquefaction (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Support Studies/ Engineering Evaluations	Maintain solvent characterization research for evaluation of advanced coal liquefaction processes. Continue novel catalyst research and process studies at Sandia. ($1,053) (SNL, Conoco, Inc., Consolidation Coal Co.)	Maintain solvent characterization research for evaluation of advanced coal liquefaction processes ($316). Continue process research guidance and process studies at Sandia National Laboratory ($689). (Total $1,005) (SNL, Consolidation Coal Co.)	Continue solvent characterization research for evaluation of advanced coal liquefaction processes ($320). Continue process research guidance and process studies at Sandia National Laboratory ($448). (Total $768) (SNL, Consolidation Coal Co.)
	Develop new base case economic evaluations and a comprehensive five-year research plan to meet the needs of the transportation sector. ($500) (NAS, LBL)	Develop new base case economic evaluations for direct liquefaction ($493) and initiate update of indirect liquefaction process design and economic evaluation ($220). (Total $713) (TBD)	No activity. ($0)
	Fund technical and program management support. ($21)	Fund technical and program management support. ($17)	fund technical and program management support. ($7)
	1,574	1,735	775
	32,309	34,526	10,623

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Combustion Systems

FY 1990 Appropriation	$33,177
Advanced Research	
o Continue research on ash formation, transformation and deposition, and upon fluidized bed and coal-fired diesel engine combustion	-201
Atmospheric Fluidized Bed Combustion	
o Continue experimental and analytical erosion studies, low rank coal research and innovative in-house development efforts	-72
o Complete funding of cooperative efforts with WRI	-296
o Reduce funding for advanced concepts program	-106
o Reduce funding for the special applications program and technical and management support	-1,250
Subtotal	-1,724
Pressurized Fluidized Bed Combustion	
o Complete testing of tube metal alloys and characterization of metal wastage	-567
o Continue in-house efforts on PFB dynamics, combustion characterization, technology analysis assessments, and modeling efforts; complete industrial applications RFP	-242
o Complete funding for low rank coal efforts at UNDEERC	-148
o Complete alternate advanced PFB concept	-168

o Complete design efforts and, initiate construction of the TIDD Hot Gas Test Unit	-4,521
o Continue Advanced Concepts efforts into Phase III	+758
o Continue PFBC component research utilizing prior year funding	-212
o Provide technical and management support	-49
Subtotal	-5,149

Advanced Combustion Technology

o Complete Phase II developments for industrial facility applications and continue Phase III proof-of-concept development of industrial/utility and small-scale applications	-1,988
o Continue low-emissions/high efficiency system development	+13
o Continue in-house research project management support, and technical and program management support.	+115
o Continue Phase III POC effort for small-scale applications	+13
Subtotal	-1,847

Alternative Fuels Utilization

o Continue fuel characterization and boiler test efforts, fuel handling, transport and storage, and in-house research efforts; provide program support	-1,984
o Complete cooperative agreement efforts with UNDEERC & ANL	-217
o Continue DOE/Italy SCCWS fuel boiler tests	-1,480
o Continue firetube boiler SCCWS fuel tests	-395
o Fund technical and management support	-67

o Continue natural gas reburn (Niles) and cofiring testing	-2,490
Subtotal	-6,633
Total FY 1991 Congressional Budget Request	$17,623

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Combustion Systems

One solution to reducing our dependence on oil as an energy resource is to convert oil- and gas-fired utility, industrial, and residential/commercial facilities to coal-based fuel as quickly as possible and to develop technologies for their continued use. Additionally, new combustion technology and coal-based fuels provide the opportunity to reduce environmental emissions and extend plant life of existing coal-fired plants. The Department of Energy has developed a program to increase the contribution and application of the nation's coal resources through the development of acceptable combustion systems and fossil-derived fuels for the marketplace. The programs within the overall Combustion Systems activity are: Advanced Research, Atmospheric Fluidized Bed (AFB) Combustion, Pressurized Fluidized Bed (PFB) Combustion, Alternative Fuels Utilization, and Advanced Combustion Technology. First generation AFB technology is considered commercial. Nineteen U.S. boiler manufacturers are offering commercial units and approximately 125 units are either in operation or under manufacture. The Fossil Energy program is directed towards second generation AFB technology (i.e., the small industrial boiler, commercial, and residential markets). Pressurized fluidized bed combustion (PFBC) technology involves burning coal in a bed of limestone (calcium carbonate) or dolomite (calcium magnesium carbonate) inside a furnace operated at elevated pressures. The advantages of this technology over other competing technologies are that it has the potential for higher efficiency, lower capital and operating costs, superior environmental performance, the ability to burn a wide variety of both high rank and low rank coal baseof both high rank and low rank retrofit capabilities. Specifically, the Fossil Energy PFBC program is directed towards the development of highly efficient, cost effective pressurized combustion systems for utility applications. The Advanced Combustion program is developing a broad range of new combustion technology that use coal and coal-based fuels to displace oil and gas. These advanced combustion systems are applicable to utility, industrial, commercial, and residential markets where coal use has traditionally been limited. The Alternative Fuels Utilization program complements the coal preparation, conversion, and combustion system technology development efforts in that it will establish the generic technology base for beneficiated coal-based slurry, liquid, and solid fuels. The standard for these fuels is that they have the potential to replace oil and gas in utility, industrial, commercial, residential, and transportation applications. Finally, advanced research examines the generic and fundamental aspects of combustion mechanisms pertinent to coal utilization technologies.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Combustion Systems, approximately 28% of the contracts are cost-shared and approximately 31 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Advanced Research	$2,972	$2,360	$2,159	-9
Atmospheric Fluidized Bed Combustion	2,735	2,961	1,237	-58
Pressurized Fluidized Bed Combustion	9,267	12,617	7,468	-41
Advanced Combustion Technology	6,201	5,556	3,709	-33
Alternative Fuels Utilization	5,521	9,683	3,050	-69
Total, Combustion Systems	$26,696	$33,177	$17,623	-47

B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Pittsburgh Energy Technology Center	$3,315	$3,492	$3,333	-5
Morgantown Energy Technology Center	$1,647	$1,825	$1,320	-28
Sandia National Laboratory	$150	$0	$0	0
Argonne National Laboratory	$755	$553	$0	-100
PFB Advanced Concepts	$4,145	$4,342	$5,100	+17
Lawrence Livermore National Laboratory	$150	$148	$0	-100
Pound National Laboratory	$50	$0	$0	0
TIDD PFB Demo Plant	$2,002	$5,922	$1,401	-76
Brookhaven National Laboratory	$100	$0	$112	+100

III. Activity Description: Combustion Systems

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research	Continue, at a reduced level of effort, research pertinent to coal combustion systems. The studies examine the fundamental aspects of combustion mechanisms, corrosive behavior and deposition of combustion products, and were performed across the full range of parameter regimes encountered by coal combustion technologies. Includes research performed by METC and PETC and $572 for research at UNDEMRC. ($2,913) (ANL, BNL, SNL, Physical Sciences, UNDEERC)	Continue generic studies on the fundamentals of coal combustion at a reduced level as earlier projects are brought to conclusion. Studies continuing include the examination of engine combustor products, evaluation of pressurized combustion using coal derived liquids, and studies focusing on ash formation and deposition in atmospheric environments. Includes in-house research performed at METC and PETC. ($2,336) (Physical Sciences, Brigham Young, Tecogen, WV Univ., SWRI, UNDEERC)	Continue research pertinent to coal combustion systems including boilers, fluidized beds, gas turbines and diesel engines. Generic and basic in nature, the studies examine the fundamental aspects of combustion mechanisms, corrosive behavior, and deposition of combustion products, and are performed across the full range of parameter regimes encountered by coal combustion technologies. Research is guided by needs for fundamental study as revealed in other Fossil Energy research and development programs. ($2,137) (Univ. of Ill., MIT, SWRI, UNDEERC, SNL, BNL, PSI)
	Fund technical and management support. ($59)	Fund technical and program management support. ($24)	Fund technical and program management support. ($22)
	2,972	2,360	2,159

III. Activity Description: Combustion Systems (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
AFB Combustion	Continue experimental and analytical erosion studies and innovative AFBC development ($526). Continue cooperative efforts with UNDEMRC ($504). (Total $1,030) (WVU, METC, Carnegie Mellon, UNDEMRC)	Continue experimental and analytical erosion studies ($154), METC in-house innovative AFB development efforts ($307), CFBC test facility efforts ($50) and low rank coal studies ($98). (Total $609) (WVU, UNDEERC, METC)	Continue experimental and analytical erosion studies, and investigate innovative AFB development efforts ($370). Continue low-rank coal studies ($167). (Total $537) (METC, UNDEERC)
	No activity. ($0)	Initiate cooperative research with WRI related to western coal research. ($296) (WRI)	No Activity. ($0)
	Complete advanced concept bench-scale testing for two concepts. ($723) (Riley-Stoker, Don Lee)	Initiate proof-of-concept program to prove feasibility for advanced concepts. ($508) (Riley-Stoker, Don Lee)	Continue advanced concepts contracts for proof-of-concept testing. (cost-sharing: TBD; historically 30% ind./70% FE) ($402) (Riley-Stoker, Don Lee)
	Continue special applications subsystem development for multiple concepts totaling $1,252 which includes $317 of prior year funds proposed for the hospital waste project. ($935) Good Samaritan Hosp., EER, MTCI)	Continue special applications at subsystem integration level. ($1,518) (EER, MTCI, TBD)	Continue development of special improved subsystem integration technology. (cost-sharing: TBD; historically 30% ind./70% FE) ($286) (TBD)
	Fund technical and program management support ($35). Provide funding for AR&TD coal export activity ($12). (Total $47)	Fund technical and program management support. ($30)	Fund technical and program management support. ($12)
	2,735	2,961	1,237
PFB Combustion	Complete testing of advanced hot gas cleanup devices, PFB components, design alterations and changes in operating parameters to improve reliability, reduce costs and enhance environmental performance using prior year funding. Dismantle NYU facility and restore site to its original state ($474). (NYU, Stone and Webster, TBD)	No activity. ($0)	No activity. ($0)
	Continue modeling studies to predict tube erosion/corrosion and linking criteria. Continue determination of mechanisms for tube wastage alloys for long term testing. ($650) (ANL, LLNL)	Complete modeling studies, including evaluation of progress. Redirect cooperative erosion program. Test new tube metal alloys. Continue characterization of metal wastage. ($567) (ANL, LLNL)	No activity. ($0)

III. Activity Description: Combustion Systems (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
PFB Combustion (cont'd)	Continue R&D at METC on PFB dynamics, systems analysis, and combustion characterization. Continue technology and economic analysis assessments. Continue evaluation of sorbent performance in advanced PFB systems. Continue evaluation of alternate advanced PFB systems. Initiate sorbent performance RFP that was delayed because of the FY 1988 MYU reprogramming action ($1,521). Continue cooperative efforts with UNDEMRC ($300). (Total $1,821) (UNDEMRC, METC, ANL, Kellog, WVU, TBD)	Continue R&D at METC on PFB dynamics, combustion characterization and systems analysis ($1,134).. Continue technology and economic analysis assessments in advanced PFB systems. Continue evaluation of alternate advanced PFB systems ($168). Complete advanced system low-rank coal testing ($148). (Total $1,450) (METC, UNDEERC, TBD, Kellog)	Continue R&D at METC on PFB dynamics, combustion characterization and systems analysis. ($892) (METC)
	Initiate hot gas clean-up test stream conceptual design efforts at TIDD PFB Demo Plant. ($2,002) (AEP)	Complete TIDD hot gas clean-up R&D conceptual design effort and initiate procurement for facility equipment ($5,922). (AEP)	Initiate construction of TIDD hot gas cleanup filter test facility. ($1,401) (AEP)
	Continue Advanced Concepts Phase II development and maintain project schedule and scope by testing critical process components such as the circulating bed required to confirm proof-of-concept. ($4,145) (Foster Wheeler)	Continue Advanced Concepts Phase II development; evaluate results and proceed to Phase III if appropriate; initiate integrated subsystem tests at 5 MWe pilot plant level ($4,342). (Foster Wheeler)	Continue Advanced Concepts Phase III Integrated subsystem tests at 5 MWe pilot plant scale. (cost-sharing: TBD; expected to be higher than historical) ($5,100) (Foster Wheeler)
	No activity. ($0)	Initiate advanced PFBC systems component R&D to address technology issues resulting from second-generation PFBC component development. ($212) (TBD)	Continue advanced PFBC systems component R&D utilizing prior year funding. ($0)
	Fund technical and program management support ($142). Provide funding for AR&TD coal export activity ($33). (Total $175)	Fund technical and program management support. ($124)	Fund technical and program management support. ($75)
	9,267	12,617	7,468

III. Activity Description: Combustion Systems (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Combustion Technology	Continue Phase II development of industrial and utility applications ($2,854). Complete Phase II combustor and component testing of residential ($1,215). Initiate solicitation for Phase III POC system development for residential and commercial applications ($1,000). (Total $5,069) (AVCO, EER, TECOGEN, CU, U.S. Navy, Otisca, UTSI, Vortec, CE, Israel Inst., MTCI, TRW, TBD)	Continue Phase II development for industrial and utility applications ($1,893). Continue Phase III POC system development for small-scale applications utilizing a total of $1,987 of which $1,000 is from prior year funds. ($987). Issue solicitation for Phase III POC system development for industrial and utility applications ($691). (Total $3,571) (VORTEC, MTCI, TRW, TBD)	Complete Phase II development for industrial/utility applications with prior year funding. Continue Phase III proof-of-concept system development for industrial/utility applications ($596). Continue Phase III POC system development for small scale commercial applications ($1,000). (Total $1,596) (Vortec, UTSI, TBD).
	No activity. ($0)	Initiate high efficiency and low emission combustion development. ($987) (TBD)	Continue advance high efficiency cycles for CO2 reduction. ($1,000) (TBD)
	Continue in-house combustion and chemical radical injection to enhance combustion and suppress pollutants ($618). Continue data base development for technology transfer to the private sector ($100), and ETC project management support ($350). (Total $1,068) (METC)	Continue in-house research on combustion enhancement and pollutant suppression/removal ($679). This activity includes project management support ($263). (Total $942) (TBD, PETC)	Continue in-house research on combustion enhancement and pollutant suppression/removal ($776). Fund project management support ($300). (Total $1,076) (PETC, TBD)
	Fund technical and program management support ($54). Provide funding for AR&TD coal export activity ($10). (Total $64)	Fund technical and program management support. ($41) Conduct coal research at ANL. ($15) (Total $56) (ANL, TBD)	Fund technical and program management support. ($37)
	6,201	5,556	$3,709
Alternative Fuels Utilization	Continue identification, formulation, characterization, and supply of coal-based fuels in support of the advanced combustion systems program. This activity includes transport, handling and storage studies ($1,466). Continue fuel and fuel combustion characterization including boiler tests of beneficiated coal-based fuels ($1,768). Continue project management support ($300). Assess and test deeply beneficiated coals for retrofitting large pre-NSPS coal-fired boilers for acid rain control ($1,504). Continue cooperative efforts with UNDEERC ($232). (Total $5,270) (PETC, CE, ARC, EI, TBD, UNDEERC)	Complete formulation and supply coal-based fuels in support of the advanced combustion program. Continue combustion characterization and boiler tests of beneficiated coal-based fuels ($1,824). Continue the fuel handling, transport and storage projects ($1,086) Continue in-house activities to assess and test deeply beneficiated coals for oil/gas-fired applications and for retrofitting large pre-NSPS coal-fired boilers for acid rain control. ($1,755). Continue project management support ($339). Continue cooperative agreement with UNDEERC & ANL ($217). (Total $5,221) (PETC, UNDEERC, TBD, ANL, Battelle, EI, Westinghouse, Tecogen)	Continue fuel characterization and boiler tests of beneficiated coal-based fuels (BCBF) ($247). Continue fuel handling, transport and storage projects ($604). Continue in house activities to assess deeply beneficiated coal based fuels for oil/gas-fired applications and for retrofitting large pre-NSPS coal-fired boilers for acid-rain control ($1,869). Continue project management support ($300). (Total $3,020) (CE, Battelle Westinghouse, Tecogen, EI)

III. Activity Description: Combustion Systems (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Alternative Fuels Utilization (con't)	Conduct super clean clurry efforts in support of the DOE/Italy cooperative agreement. ($160) (CE, Penn State Univ.)	Continue DOE/Italy cooperative project on super clean slurries that was transferred from AR&TD. ($1,480) (Penn State)	Continue DOE/Italy Super Clean Coal Water Slurry (SCCWS) project with prior year funds ($0). (Penn State)
Alternative Fuels Utilization	No activity. ($0)	Initiate firetube boiler tests of super clean water slurries. ($395) (TBD)	Continue firetube boiler tests of super clean coal water fuels utilizing prior year funding ($0). (TBD)
	No activity. ($0)	Conduct natural gas cofire/reburn testing efforts at Niles, Ill. plant ($2,467). Conduct natural gas cofiring research evaluations ($23). (Total $2,490) (Radian Corp., TBD)	Continue natural gas cofire/reburn testing at Niles, IL plant and conduct natural gas cofiring research evualuations using prior year funds. ($0) (Radian Corp., TBD)
	Fund technical and program management support ($76). Provide funding for AR&TD coal export activity ($15). (Total $91)	Fund technical and program management support. ($77) Conduct coal research at ANL ($20). (Total $97) (ANL, TBD)	Fund technical and program management support. ($30)
	5,521	9,683	3,050
	26,696	33,177	17,623

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Fuel Cells

FY 1990 Appropriation	$37,999
Advanced Research	
o Terminate all research but molten carbonate anode/cathode electrochemistry	-1,106
Phosphoric Acid Systems	
o Conclude development effort on the air-cooled 375 kW module	-8,291
Molten Carbonate Systems	
o Reduce level of effort for development of two molten carbonate systems selected in FY 1990; discontinue stack research, materials research, and cost reduction efforts	-11,092
Advanced Concepts	
o Reduce level of effort for development of tubular solid oxide technology and discontinue development of monolithic and other advanced fuel cells	-10,428
FY 1991 Congressional Budget Request	$ 7,082

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Fuel Cells

The objectives of the Fuel Cells program are: (1) to support technology base development of fuel cell systems to provide environmentally superior technology for the generation of electrical and thermal energy for electric utility, industrial, and commercial/residential markets; and (2) to provide technology that improves U.S. international competitiveness by generating export sales for technology/products. Fuel Cells systems are among the several advanced technologies currently under development that offer the prospect of reducing criteria pollutants below current NSPS levels, reducing non-criteria pollutants such as CO2 and acid rain precursors, and reducing thermal emissions to the environment. These reductions are achieved through the high efficiency and the inherently low emissions of fuel cell systems. International fuel cell development efforts are underway, but the U.S. is the current world leader. If this lead is maintained and the development goals are met, the U.S. could become the leading exporter of this technology. First generation phosphoric acid systems have reached prototype commercial status while advanced molten carbonate and solid oxide fuel cell stacks have been successfully operated for several thousand hours at the 5 - 20 kW scale. Higher systems efficiencies and lower costs are forecast for the second generation systems which will operate on coal-based fuels and dual fuels (coal and gas) in multiple end use sectors. Advanced research, fundamental and generic in nature, is conducted to better understand the basis of the underlying processes involved in fuel cell operation and to explore novel concepts.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Fuel Cells, approximately 44% of the contracts are cost-shared and approximately 16 percent of the funding is the private sector's cost-sharing contribution. It 's believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Advanced Research	$1,597	$1,458	$352	-76
Phosphoric Acid Systems	9,500	8,291	0	-100
Molten Carbonate Systems	7,069	16,777	5,685	-66
Advanced Concepts	8,368	11,473	1,045	-91
Total, Fuel Cells	$26,534	$37,999	$7,082	-81

II. B. Major Laboratory and Facility Funding

Morgantown Energy Technology Center	$101	$198	$44	-78
Argonne National Laboratory	$1,072	$1,521	$498	-67
Pacific Northwest Laboratory	$260	$257	$0	-100
Los Alamos National Laboratory	$185	$148	$0	-100

III. Activity Description: Fuel Cells

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research	Continued fundamental electrochemistry research on advanced fuel cell concepts. Studies include anode and cathode chemistry catalysts and catalysis-aided reactions, structural science and interconnection considerations. Performed set of studies examining the fundamental aspects of novel, advanced fuel cell concepts. ($1,550) (ANL, LANL, PNL, Portland State Univ., TBD)	Continue generic research in electrochemistry. Studies will include alternate electrolytes, catalyst-aided reactions, materials research, emphasis on advanced cathodes, and research on contaminant resistent catalysts. Reduce studies of novel concepts as FY89 studies are completed. ($1,443) (ANL, LANL, Portland State Univ., PNL)	Continue research on molten carbonate fuel cell anodes and cathodes at a reduced level, examining fundamental electrochemistry and materials interactions. Terminate research on internally manifolded molten carbonate cells, molten carbonate and solid oxide cell contaminants and their effects upon catalysts, and advanced solid oxide material effects. ($348) (ANL)
	Continued technical and program management support ($32). Provided funding for AR&TD coal export activity ($15). (Total $47)	Continue technical and program management support. ($15)	Continue technical and program management support. ($4)
	1,597	1,458	352
Phosphoric Acid Systems	Completed testing of verification test article (200 kW system). ($0)	No activity. ($0)	No activity. ($0)
	Continued configuration "B" cell development. Development to be completed in FY 1992 with previously obligated funds. ($0)	Continue configuration "B" cell development with previously obligated funds. ($0)	Continue configuration "B" cell development with previously obligated funds. ($0)
	Continued development of air-cooled module technology through design of a basic building block which is a 375 kW module. ($9,395) (Westinghouse)	Continue development of air-cooled module technology. ($8,208) (Westinghouse)	No activity. ($0)
	Completed contracts funded in FY 1988 for a basic technology R&D activity. ($0)	No activity. ($0)	No activity. ($0)
	Continued technical and program management support. ($105)	Continue technical and program management support. ($83)	No activity. ($0)
	9,500	8,291	0

III. Activity Description: Fuel Cells (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Molten Carbonate Systems	Continued development of three coal-fueled MCFC technologies. ($6,840) (IFC, ERC, IGT)	Continue the three ongoing efforts. Initiate competitive action to select the two most promising cost-shared MCFC system/stack technologies. Continue stack research with the third developer. ($16,510) (IFC, ERC, IGT, TBD)	Continue, at a reduced level of effort, two cost-shared MCFC system/stack contracts selected under the FY 1990 competitive action (cost-sharing: TBD). ($5,578) (TBD)
	Continued technology base research and coal gasification/MCFC system study. ($151) (ANL, METC)	Continue systems assessment of MCFC systems. ($99) (METC)	Continue development of alternate anode materials. ($50) (ANL)
	Continued technical and program management support. ($78)	Continue technical and program management support. ($168)	Continue technical and program management support. ($57)
	7,069	16,777	5,685
Advanced Concepts	Continued development of solid oxide fuel cell (SOFC) technology for a multi-kW generator. ($6,946) (Westinghouse)	Continue development of tubular SOFC technology for coal-fueled applications. ($8,918) (Westinghouse)	Continue, at a reduced level of effort, cost-shared technology development on tubular SOFC (cost-sharing: TBD). ($891) (Westinghouse)
	Continued development of promising advanced concepts and materials totaling $1,688 which included $458 in prior year funds ($1,230). Conducted coal gasification/SOFC system analysis and SOFC technical support ($100). (Total $1,330) (PNL, Allied Signal, METC, ANL)	Continue coal gasification/SOFC systems analysis and SOFC technical support ($149). Continue development of the monolithic SOFC and other advanced concepts ($1,919). Continue characterization and development of specialized materials for advanced fuel cells ($373). (Total $2,441) (METC, Allied Signal, ANL, PNL, TBD)	Continue coal gasification/SOFC systems analysis ($44). Continue materials development at a reduced level ($100). (Total $144) (METC, ANL)
	Continued technical and program management support. ($92)	Continue technical and program management support. ($114)	Continue technical and program management support. ($10)
	8,368	11,473	1,045
	26,534	37,999	7,082

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Heat Engines

FY 1990 Appropriation	$20,942
Gas Turbines	
o Continue coal-fueled gas turbine systems test with one contractor instead of three contractors	-5,574
o Complete low rank coal activities at UNDEERC	-99
o Decrease in-house activities and technical and program management support	-1,712
Subtotal	-7,385
Diesel Engines	
o Continue coal-fueled diesel engine integrated systems test with one contractor instead of two contractors; continue coal-fueled diesel engine novel concept project	-7,248
o Continue low rank coal activities at UNDEERC; decrease in-house activities and technical and program management support	-266
Subtotal	-7,514
FY 1991 Congressional Budget Request	$ 6,043

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Heat Engines

The principal goals of this activity are to ensure the strategic security of liquid and gas supplies and to provide technology and technology-based products that improve U.S. international competitiveness by generating export sales for technology/products. The successful development of coal-fueled heat engines could provide an alternative to oil-fueled systems in industrial cogeneration, locomotive, marine and utility applications, as well as provide new, more efficient and lower cost options for the production of electric and mechanical power from coal. The Heat Engines program focuses on overcoming the technical problems associated with the combustion, corrosion, deposition, wear and particulate control when burning dry, slurried or gaseous coal fuels in turbines and diesels. Successful completion of these research and development activities could result in the introduction of coal-fueled heat engines into the marketplace during the 1990's.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Heat Engines, approximately 53% of the contracts are cost-shared and approximately 18 percent is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Gas Turbines	12,506 1/	$10,419	$3,034	-71
Diesel Engines	9,752	10,523	3,009	-71
Total, Heat Engines	$22,258 1/	$20,942	$6,043	-71

1/ FY 1989 appropriated funds in the amount of $574,000 were utilized for SBIR which were replaced with a like amount of prior year funds to continue the Heat Engines program at the intended level of effort.

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Morgantown Energy Technology Center	$3,575	$3,067	$1,235	-60
Argonne National Laboratory	$150	$75	$0	-100

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
Gas Turbines	Continued coal-fueled gas turbine integrated systems testing aimed toward POC in FY 1992 with three contractors including advanced heat engine component studies and turbine testing. ($9,561) (Allison Gas Turbine, Westinghouse, Solar, Clemson Univ.)	Continue coal-fueled gas turbine integrated system testing aimed toward POC in FY 1992 with three contractors including component studies and turbine testing. ($7,693) (Allison Gas Turbine, Westinghouse, Solar, GE, Hague Int'l, TBD)	Continue cost-shared coal-fueled gas turbine integrated system testing aimed toward POC in FY 1992 with one contractor (cost-sharing: TBD; historically 23% ind./77% FE). ($2,119) (TBD)

III. Activity Description: Heat Engines (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Gas Turbines (cont'd)	Evaluated and characterized coal-based liquids in METC pressurized combustor test stand ($500). Designed advanced gas cleanup device for METC gas turbine combustor ($400). Initiated design and fabrication of advanced combustion test rig totaling $2,100 which included $574 in prior year funds. ($1,526). (Total $2,426) (METC)	Continue pressurized coal combustion testing, advanced combustion test facility fabrication, and systems analyses. Total of $3,258 includes $735 in prior year funds. ($2,523) (METC, TBD)	Continue pressurized coal combustion testing, including testing in the advanced combustion test facility, and systems analysis. ($885) (METC)
	Continued low-rank coal activities. ($250) (UNDEERC)	Continue combustion tests with low-rank coals. ($99) (UNDEERC)	Complete combustion tests with low-rank coals using prior year funds. ($0) (UNDEERC)
	Continued technical and program management support ($262). Provided funding for AR&TD coal export activity totaling $24 which included $17 in prior year funds ($7). (Total $269)	Continue technical and program management support. ($104)	Continue technical and program management support. ($30)
	12,506	10,419	3,034
Diesel Engines	Evaluated and tested novel injection combustion and wear from coal water mixtures (CWM) and new fuel forms in METC diesel engine test facility ($375). Continued coal-fueled diesel engine integrated system tests aimed toward POC by FY 1993 with two contractors, including emissions, lubrication and component barrier issues ($7,398). Investigated advanced diesel cycles in METC diesel rig ($200). (Total $7,973) (A.D. Little, GE, METC, NIOSH, SWRI, MTI)	Continue diesel combustion testing and systems analysis ($544). Continue coal-fueled diesel engine integrated system development aimed toward POC by FY 1993 with two contractors including emissions evaluation, novel injector testing, and a feasibility on using CWM in a diesel truck ($8,477). (Total $9,021) (METC, A.D. Little, GE, NIOSH, TBD)	Continue diesel combustion testing and systems analysis ($350). Continue coal-fueled diesel engine integrated system development aimed toward POC by FY 1993 with one contractor on a cost-shared basis, including emissions evaluation, novel injector and wear testing, endurance testing and evaluation of markets (cost-sharing: TBD; historically 18% ind./82% FE) ($1,929). (Total $2,279) (METC, TBD)
	Continued coal-fueled diesel engine novel concept project. ($1,492) (Caterpillar)	Continue coal-fueled diesel engine novel concept project. ($1,200) (Caterpillar)	Continue coal-fueled diesel engine novel concept project. ($500) (Caterpillar)
	Continued low-rank coal activities. ($84) (UNDEERC)	Continue low rank coal diesel program. ($197) (UNDEERC)	Continue low rank coal diesel program. ($200) (UNDEERC)

III. Activity Description: Heat Engines (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Diesel Engines (cont'd)	Continued technical and program management support ($195). Provided funding for AR&TD coal support activity totaling $11 which included $3 in prior year funds ($8). (Total $203)	Continue technical and program management support. ($105)	Continue technical and program management support. ($30)
	9,752	10,523	3,009
	22,258	20,942	6,043

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Underground Coal Gasification

FY 1990 Appropriation	$815
Environmental and Advanced Research	
o Eliminate UCG data system evaluation and maintenance	-40
o Environmental restoration activities at previous UCG test sites believed to be complete; reduced activity level anticipated	-347
Subtotal	-387
Gasification Technology Development	
o Continue cooperative research efforts and post burn analysis of the results of the RM-1 test	+37
FY 1991 Congressional Budget Request	$465

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. **Preface: Underground Coal Gasification**

Underground Coal Gasification (UCG) represents viable technologies for in situ (underground) conversion of coal to a cleaner burning, easily transportable gaseous fuel. UCG technology development supports the goal of substantially expanding the environmentally sound use of U.S. coal that is presently economically or technically infeasible to mine. Some technical problems that need to be solved include gasification of coalbeds that are especially thick or deep, contain non-coal occlusions, or have high ash content. Coalbeds that have an excessive angle of dip, and/or which have gasification of unpredictable or poor overburden characteristics that make mining unsafe are also candidates for study. In general, program efforts are directed toward the definition of sufficient technical, operational, and environmental parameters to allow industry to make the necessary decisions as to commercialization, while also promising a more economical route to developing a synthesis feedstock suitable for conversion to power, syngas, methanol, gasoline, or diesel fuel.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expeditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Underground Coal Gasification, approximately 100% of the contracts are cost-shared and approximately 66 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. **Summary Table:**

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Environmental and Advanced Research	1,103	605	218	-64
Gasification Technology Development	$268	$210	$247	+18
Total, Underground Coal Gasification	$1,371	$815	$465	-43

II. B. **Major Laboratory and Facility Funding**

	FY 1989	FY 1990	FY 1991	% Change
Morgantown Energy Technology Center	$40	$40	$0	-100
Lawrence Livermore National Laboratory	$133	$0	$0	0

III. **Activity Description:**

Program Activity	FY 1989	FY 1990	FY 1991
Environmental and Advanced Research	No activity. ($0)	Maintain and evaluate UCG data system including all recent environmental data. ($40) (METC)	No activity. ($0)

III. Activity Description: Underground Coal Gasification (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Environmental and Advanced Research (cont'd)	Continue ground water restoration at RM-1 test site, and environmental impact planning mitigation research and evaluation through WRI with emphasis on field based evaluations of aquifer contaminant intrusion, and transport mechanisms and methods affecting clean-up. ($528) (WRI)	Restoration work believed completed; no further funding expected. ($0)	Restoration work believed completed; no further funding expected. ($0)
	Continue environmental compliance, restoration, and reclamation activities at historical UCG test sites. ($575) (WRI)	Continue environmental compliance, restoration, and reclamation activities at UCG test sites. ($210) (WRI)	Continue environmental compliance, restoration, and reclamation activities at UCG test sites. ($216) (WRI)
	No activity. ($0)	Implement ground water restoration and surface reclamation activities at UCG field test sites. ($347) (TBD)	Restoration believed complete; no further requirement anticipated. ($0)
	No activity. ($0)	Fund technical and program management support. ($8)	Fund technical and program management support. ($2)
	1,103	605	218
Gasification Technology Development	Continue post burn analysis, coring, monitoring and evaluation of the three-year cost-shared field test (RM-1). ($241) (LLNL, WRI, METC)	Continue cooperative research efforts with WRI. ($210)	Continue cooperative research efforts with WRI. ($245)
	Fund technical and program management support. ($27)	No activity. ($0)	Fund technical and program management support. ($2)
	268	210	247
	1,371	815	465

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Magnetohydrodynamics

FY 1990 Appropriation	$ 40,367
Magnetohydrodynamics (MHD)	
o Withdraw Federal funding support for further MHD development	-40,367
FY 1991 Congressional Budget Request	$ 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

I. Preface: Magnetohydrodynamics (MHD)

The goal of the MHD program is to provide an environmentally superior technology for the generation of electric power. MHD is one of several advanced power generation technologies currently under development that offers the prospect of reducing criteria pollutants below current NSPS levels, as well as non-criteria pollutants such as CO2 and acid rain precursors, and thermal emissions. These reductions are achieved through the potentially high efficiency and inherent emissions control chemistry of MHD systems. MHD development efforts are underway in several foreign countries, but the U.S. is the current world leader. The current MHD program is based on a program plan which was in accord with the consensus views of the government and industry participants in 1984. This plan calls for the successful completion of a proof-of-concept (POC) program. The POC program is the next logical step to a retrofit demonstration which is needed to determine subsequent commercial application. The POC program was initiated in late FY 1987 through the awarding of major contracts. In FY 1988, hardware design efforts and design basis R&D were conducted in support of POC objectives and in FY 1989, the Department continued the second year of the POC program. Since it is estimated that $92 million (in 1988 dollars) beyond FY 1990 is needed for the remaining period (1991-1993) to complete the POC program, the Department believes that although technologically attractive, the MHD program is not affordable in light of current fiscal constraints, and is not a high priority given the other advanced combustion concept being supported. Therefore, no funds have been requested for FY 1991 and subsequent years.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. Since FY 1986, the Congress has included specific private sector cost-sharing requirements for the POC program in its annual appropriation bills. The required cost-sharing was 10% in FY 1986, 20% in FY 1987, and for each subsequent fiscal year it increases by 5% over the life of the POC program. Thus, private sector cost-sharing was 25% in FY 1988, 30% in FY 1989 and 35% in FY 1990. The cost-sharing formula established by Congress is complex since there are exclusions and costs which can not be used in calculating the required percentage for private sector contributions. Cost-sharing need not be met on each contract but is to be met in total for each fiscal year. Within MHD, approximately 12% of the contracts are cost-shared and approximately 29 percent of the funding is the private sector's cost-sharing contribution.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Proof-of-concept Topping Cycle	$24,395	$25,365	$0	-100
Proof-of-concept Bottoming Cycle	8,353	9,031	0	-100
Proof-of-concept Seed Regeneration	164	2,467	0	-100
Systems Studies/Supporting Res./Conceptual Design	4,088	3,504	0	-100
Total, Magnetohydrodynamics	$37,000	$40,367	$0	-100

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Pittsburgh Energy Technology Center	$379	$346	$0	-100
Argonne National Laboratory	$600	$642	$0	-100
Mountain States Energy - CDIF	$10,050	$11,350	$0	-100
University of Tennessee - CFFF	$7,703	$8,241	$0	-100

III. Activity Description: Magnetohydrodynamics

Program Activity	FY 1989	FY 1990	FY 1991
POC Topping Cycle	Continued design and development of prototypic hardware for integrated topping cycle. ($14,345) (TRW)	Complete design for prototypic combustor and channel. Conduct design reviews for combustor and channel. Begin hardware fabrication. ($14,015) (TRW)	No activity. ($0)
	Continued testing and facility preparations in support of long-duration proof-of-concept (POC) integrated topping cycle tests at the Component Development Integration Facility (CDIF). Total of $10,550 included $500 in prior year funds. ($10,050) (MSE)	Continue testing and facility preparations in support of long-duration POC integrated topping cycle tests at the CDIF. ($11,350) (MSE)	No activity. ($0)
	24,395	25,365	0
POC Bottoming Cycle	Provided technical support to the Coal-Fired Flow Facility (CFFF) for integrated bottoming cycle POC tests. ($50) (Babcock & Wilcox)	Provide technical and engineering support to CFFF for integrated bottoming cycle POC. ($148) (Babcock & Wilcox)	No activity. ($0)
	Continued correlation of bottoming cycle test data and conducted analyses in support of MHD power train. ($600) (ANL)	Continue correlation of bottoming cycle test data and conduct analyses in support of MHD power train. ($642) (ANL)	No activity. ($0)
	Performed tests at CFFF in support of POC design and provided for new bottoming cycle equipment. ($7,703) (UTSI)	Continue tests at CFFF in support of POC design and install new integrated bottoming cycle equipment. ($8,241) (UTSI)	No activity. ($0)
	8,353	9,031	0
POC Seed Regeneration	Evaluated results of Phase I efforts in seed regeneration process development and selected Phase II contractor to proceed with POC scale testing. ($164) (TRW)	Design process units and facility to conduct POC scale tests and begin fabrication. ($2,467) (TRW)	No activity. ($0)
	164	2,467	0
Sys. Studies, Supporting Res. and Conceptual Plant Design	Completed development of superconducting magnet technology in support of POC. ($188) (MIT)	Assess innovations in superconducting magnet technology development. ($99) (MIT)	No activity. ($0)
	Provided instrumentation support to MHD facilities and continued development of instrumentation technology. ($2,750) (Mississippi St. Univ.)	Provide instrumentation support to MHD facilities and continue development of instrumentation technology. ($2,714) (Mississippi St. Univ.)	No activity. ($0)

III. Activity Description: Magnetohydrodynamics (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Sys. Studies, Supporting Res. and Conceptual Plant Design (cont'd)	Provided technical support for POC program. Provided contract administration support for PETC. Conducted feasibility study on generic combustion diagnostic instrumentation and analysis facility. ($454) (Burns & Roe, CNO)	Provide technical support for POC program. Provide contract administration support for PETC. ($420) (Burns & Roe, CNO)	No activity. ($0)
	Began plant design assessment based on data emerging from integrated topping cycle and integrated bottoming cycle tests. ($481) (MDC, Westinghouse)	Continue plant design assessment. ($49) (MDC, Westinghouse)	No activity. ($0)
	Continued technical and program management support ($200). Provided funding for AR&TD coal export activity ($15). (Total $215) (TBD)	Continue technical and program management support. ($222)	No activity. ($0)
	4,088	3,504	0
	37,000	40,367	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Surface Coal Gasification

FY 1990 Appropriation	$23,428
Advanced Research	
o Significantly reduce work on the cleavage and restoration of bonds and on in-situ control of contaminants; discontinue work on biogasification and separation of H_2 and CO_2 from process streams.	-2,071
Systems for Power Production	
o Reduce METC in-house efforts on construction of the fixed-bed gasifier and initiate design and construction of a fluidized bed gasifier	-201
o Complete funding for IGCC site studies	-296
o Decrease GE test program data base	-684
o Continue Texaco program to develop design of gasifier/hot gas cleanup systems for an IGCC demonstration at reduced level	-1,413
o Fund program management support	-26
Subtotal	-2,620
Systems for Industrial Fuel Gas Production	
o Phase out the industrial fuel gas program	-919

Systems for Synthesis Gas Production

o Decrease modeling and analysis efforts	-39
o Conduct transportation fuels studies and hydrogen preparation studies	-92
o Complete funding for low rank coal studies at UNDEERC	-493
o Fund program management support	-6
Subtotal	-630

Systems for Coproducts Production

o Decrease optimization of mild gasification processes	-5,327
o Continue, at reduced funding, scale-up of mild gas process	-1,961
o Decrease characterization and evaluation studies for testing and upgrading low rank coals	-938
o Complete efforts to investigate upgrading of condensibles at WRI	-418
o Continue studies of improved mild gasification product separation techniques	+200
o Continue fuel upgrading research at Lummus Crest	+105
o Complete funding for the construction of a bench scale reactor	-691
o Continue modeling and system assessment efforts	+415
o Fund program management support	-88
Subtotal	-8,703
Total FY 1991 Congressional Budget Request	$ 8,485

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COAL

1. Preface: Surface Coal Gasification

The efficient and environmentally sound use of the most abundant fuel resource in the U.S., coal, is essential to our national energy policy of energy self sufficiency and national security. Energy systems based on Surface Coal Gasification technology have the potential to provide a cost effective and an environmentally superior means for meeting the needs of the utility, industrial, residential, transportation and commercial energy sectors. In order to achieve this potential, significant technical advances must be made to reduce the costs of these advanced gasification systems. The research and development program being conducted by the Department of Energy in coal gasification is directed at objectives of reducing system capital costs, reducing system operating costs, reducing facility construction time, minimizing the environmental impact of the new technology and increasing system efficiencies.

The Surface Coal Gasification Program is structured for the development of advanced gasification systems. The program activities are: (1) Advanced Research, where fundamental research is conducted in basic coal science, reaction mechanisms, and separation technology associated with coal gasification. The advanced research subprogram provides crosscutting support for each of the system activities, thus, supporting the goals of the Department as they relate to each system development; (2) Systems for Power Production, where efforts are primarily directed toward achieving better economics and fuel conversion efficiencies for integrated gasification combined cycle systems. These systems employ air-blown coal gasification with high-temperature gas cleanup devices and are used for electric power production from coal at lower cost and with significantly lower environmental emissions than conventional pulverized coal plants. These efforts support the Departmental near and mid-term goals for generation of electric power. Projections of increased demand for electric power in the 1995-2000 time frame clearly indicate a need for cleaner, more efficient modern power plants. Advanced coal gasification power plants could become the power generation option of choice for both new plants and repowered existing plants within the next decade. Stricter environmental standards would accelerate acceptance of this technology into the marketplace; (3) Systems for Industrial Fuel Gas Production where efforts had been directed at finding methods to improve the economics for using coal-derived fuel gas in industrial processes. This activity has been identified as one which does not appear to have a high degree of success for replacing oil in the near to mid-term and, as such, is being phased-out in FY 1991; (4) Systems for Synthesis Gas Production where efforts are directed at providing new and lower cost methods for producing hydrogen from coal and improving gasifier designs for producing synthesis gas at lower cost which ultimately translates into producing liquid transportation fuels at reduced costs. These efforts support the Departmental goals of ensuring the strategic security of liquid and gaseous fuel supplies with reduced dependence on liquid imports. The major parts of the Syngas Program are the development of low-cost methods for the production of hydrogen, which is essential in the direct liquefaction process for producing liquid transportation fuels from coal and the development of low-cost methods for the production of synthesis gas, which can substitute for oil and gas as a feedstock in the production of liquid fuels (such as methanol) and chemicals. (5) Systems for Coproducts Production, where efforts are directed toward providing the technology development needed to optimize the simultaneous production of solids, liquids and gases through use of mild gasification techniques. These efforts are aimed at near and mid-term commercialization based on early "proof-of-concept" development starting in FY 1990, thereby, supporting the Departmental goal of ensuring strategic security of liquids and gaseous fields with reduced dependence on oil imports. The successful completion of the coproducts program will lead to the production of liquid fuels suitable for use in the transportation sector, as well as solids which are useful in many existing industries and fuel gas, which is used internally in the process. These liquid fuels could replace a significant portion of the petroleum-based feedstock currently being used in that market; and (6) Great Plains Gasification Project, where efforts were directed to providing program management and monitoring support to the Great Plains Project. This effort was completed in FY 1989, and no activity is expected in FY 1991. The plant, which produces synthetic natural gas from lignite, was sold to industry, and the Department no longer has responsibility for this project.

I. **Preface: Surface Coal Gasification (cont'd)**

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front and where the technical risk is the highest than at the more advanced stages. Within Surface Coal Gasification, approximately 29% of the contracts are cost-shared and approximately 11 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. **Summary Table:**

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Advanced Research	$2,679	$2,617	$546	-79
Systems for Power Production	5,926	6,318	3,698	-41
Systems for Industrial Fuel Gas Production	848	919	0	-100
Systems for Synthesis Gas Production	2,503	1,724	1,094	-37
Systems for Coproducts Production	9,084	11,850	3,147	-73
Great Plains Coal Gasification Project	517	0	0	0
Total, Surface Coal Gasification	$21,557	$23,428	$8,485	-64

II. B. **Major Laboratory and Facility Funding**

	FY 1989	FY 1990	FY 1991	% Change
General Electric Company	$2,203	$1,184	$500	-58
Morgantown Energy Technology Center	$2,037	$4,181	$3,447	-18
Texaco, Inc.	$1,426	$2,369	$1,361	-43
Argonne National Laboratory	$150	$0	$100	+100
Lawrence Livermore National Laboratory	$800	$296	$0	-100
Lawrence Berkeley Laboratory	$400	$296	$0	-100
Brookhaven National Laboratory	$300	$247	$100	-60
Oak Ridge National Laboratory	$150	$148	$200	+35

III. **Activity Description: Surface Coal Gasification**

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research	Complete work on the biological conversion of coal to methane. Complete work on the mechanisms of ash agglomeration in fluidized bed gasifiers. Conduct characterization studies of mild gasification mechanisms and development of novel catalyst concepts. ($2,106) (ARC, IGT, LBL, AFR, ORNL, Brown Univ., UNDEERC, METC, BNL)	Conduct METC in-house work on product and precursor properties of condensible hydrocarbons ($257); continue coal gasification system assessment and modeling effort ($251). Continue characterization studies of mild gasification mechanisms and development of novel catalysts ($444). (Total $952) (AFR, METC, Univ. of Arkansas, ARCTECH, ORNL, LBL, UNDEERC)	Conduct studies on ash and slag characteristics ($175); continue work on mechanisms and modeling of coal devolatilization and gasification ($42). (Total $217) (UNDEERC, AFR)

III. Activity Description: Surface Coal Gasification (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Research (cont'd)	Continue work on separating hydrogen from synthesized gas using ion exchange membranes. Complete work on the factors controlling cleavage and restoration of bonds. Complete work on study of active carbon site distribution. Initiate work on membrane separation of gas/liquid mixtures and CO2 separation. ($519) (SRI, Brown Univ., LBL, NBS, TBD) Fund technical and program management support. ($54)	Complete work on separating hydrogen from synthesized gas using ion exchange membranes. Continue bond cleavage work. Continue work on novel methods to separate H2 and CO2 from gasification process streams. Start work on trace element contaminant studies. Initiate work on direct biological gasification of coal. ($1,630) (TBD) Fund technical and program management support. ($27)	Continue work on factors controlling cleavage and restoration of bonds ($200); Continue research on in-situ control of contaminants ($123). (Total $323) (TBD) Fund technical and program management support. ($6)
	2,679	2,617	546
Systems for Power Production	Continue studies on entrained flow reactors to reduce process severity and increase efficiency of gasification ($346). Continue environmental sampling and analysis to characterize process and effluent streams ($95). Modify existing gasifier and hot gas cleanup system ($1,400). Total of $2,225 which includes $384 of prior year funding needed for Rockwell facility disposal efforts. (Total $1,841) (METC, Radian, Univ. of Miss.)	Continue METC in-house sulfur kinetic studies to address sulfur release and capture under gasification conditions, effluent characterization studies on gasification reactors and subsystems, ($816), continue development of a fixed bed gasifier and related research utilizing a total of $2,220 of which $1,430 is from prior year funding. ($790). Initiate design of a fluidized bed gasifer ($395); (Total $2,001) (METC, TBD)	Continue construction of a fixed-bed gasifier and initiate design and construction of a fluidized-bed gasifier for kinetic studies to address sulfur release and capture under gasification conditions. ($1,800) (METC, TBD)
	Conduct study comparing cost and performance of IGCC systems and deliver final report. ($400) (SCS)	Provide technical assistance for advanced IGCC site study ($296) (CRS-Sirrine)	No Activity ($0).
	Continue funding for the application of hot gas desulfurization for integrated gasifier combined cycle systems. ($2,203) (GE)	Continue hot gas turbine valve testing for integrated gasifier combined cycle system. ($1,184) (GE)	Expand test program to develop data base needed to commercialization. (cost-sharing: TBD; historically 20% ind./80% FE) ($500) (GE)
	Continue development and testing of hot desulfurization in entrained flow reactor system for power generation ($1,426). Conduct instrumentation tests on Texaco gasifier ($47). (Total $1,473) (Texaco, TBD)	Continue development of hot desulfurization techniques in an entrained flow reactor system for power production. ($2,369) Optimize gasification systems for power production ($405). (Total $2,774) (Texaco, TBD)	Continue development and design of gasifier and hot gas cleanup sub-systems for an IGCC demonstration. (cost-sharing: TBD; historically 20% ind./80% FE) ($1,361) (Texaco)

III. Activity Description: Surface Coal Gasification (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Systems for Power Production (cont'd)	Fund technical and program management support. ($9)	Fund technical and program management support. ($63)	Fund technical and program management support. ($37)
	5,926	6,318	3,698
Systems for Industrial Fuel Gas Production	Continue development of economical methods for oxygen production to obtain scale-up data and requirements for multi-ton/day plants ($250). Continue METC support for the planning implementation and application of the gasification data base ($100). Continue operation of fluidized-bed reactor at METC to investigate fluidization phenomena and develop reaction models and heat transfer correlations ($477). (Total $827) (JPL, METC)	Complete development of economical oxygen production methods. Complete reaction model development ($210). Complete operation of METC's fluid-bed gasifier to study interrelated gasification and hot gas cleanup systems utilizing $219 of prior year funds and, complete METC's advanced instrumentation research to develop techniques that will improve the monitoring and control of fossil energy systems. ($700) (Total $910) (METC, AFR)	The Industrial Fuel Gas production program will be phased out. This activity has been identified as one which does not appear to have a high degree of success for replacing oil in the near to mid-term and, as such, is being phased out in FY 1991. Related research will be continued in other parts of the surfaced coal gasification program, however. ($0)
	Fund technical and program management support. ($21)	Fund technical and program management support. ($9)	No activity. ($0)
	848	919	0
Systems for Synthesis Gas Production	Continue engineering and technical support for the joint DOE/GRI coal gasification program ($538). Continue development of a novel concept low-energy consumption method for separation of hydrogen from coal-derived gas ($208). Continue gasification systems analysis and system model development effort ($547). Initiate low cost hydrogen studies ($325). (Total $1,618) (METC, CCNY, TBD, Foster Wheeler, MTR)	Complete DOE/GRI utilizing prior year funding ($0). Continue METC gasification systems analysis and model development effort; as well as engineering and technical support for the coal gasification program ($622). Continue research on novel gas separation techniques ($592). (Total $1,214) (METC, SCS, RTI, CCNY)	Expand METC gasification systems analysis and model development efforts ($583). Develop innovative concepts for improving hydrogen preparation ($300) and study on optimized gasification system for high quality transportation fuels ($200). (Total $1,083) (METC, TBD)
	Continue testing for hydrogen production from low rank coal and waste water treatment studies. ($845) (UNDEERC)	Continue testing for hydrogen production from low-rank coal and advanced wastewater treatment studies. ($493) (UNDEERC)	No Activity. ($0)
	Fund technical and program management support ($25). Provide funding for AR&TD coal export activity ($15). (Total $40)	Fund technical and program management support. ($17)	Fund technical and program management support. ($11)
	2,503	1,724	1,094

III. Activity Description: Surface Coal Gasification (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Systems for Coproducts Production	Conduct comparative slow and rapid heating rate experiments to establish a matrix of product yields; investigate product options for coal-based fuels from mild gasification ($700). Modify METC entrained flow reactor for mild gasification verification testing ($450). Continue development of advanced, continuous mild gasification systems to produce optimum readily useable coproducts including fuels characterization ($6,919). (Total $8,069) (METC, UCCRC, LLNL, ERC, BNL, IGT, UNDEERC, WRI, TBD, Battelle)	Investigate the relationships between mild gasification reaction conditions and product properties; conduct scale-up studies for mild gasification ($620). Continue development of advanced continuous mild gasification systems to produce optimum readily useable coproducts ($2,550). Continue mild gasification process design and testing activities at existing facilities ($1,678). Initiate scale-up of advanced mild gasification process ($2,961). Initiate scale-up of char to clean carbon process ($987). Initiate combustion and mutagenic characterization tests of mild gasification coproducts ($296). (Total $9,092) (METC, IGT, CTC, UNDEERC, WRI, LLNL, ORNL, BNL, AMAX, AFR, TBD)	Continue to investigate the relationships between mild gasification reaction conditions and product properties; investigate mild gasification char reactivity; provide support for product upgrading and process evaluation efforts ($804). Upgrade mild gasification plant on a 20% ind./80% FE cost-shared basis to 1 ton/hr capability. ($1,000). (Total $1,804) (METC, BNL, ANL, TBD)
	No activity. ($0)	Characterize and evaluate advanced technologies for treating and upgrading low rank coals in order to increase their marketability. ($738) (TBD)	No activity. ($0)
	No activity. ($0)	Investigate pyrolysis of coal under mild gasification conditions. Investigate upgrading condensibles to marketable fuels. ($418) (WRI)	Initiate studies to improve mild gasification products ($200) (ORNL)
	Continue modeling analysis and system assessment of advanced coal conversion processes. ($304) (AFR)	Continue modeling and system assessment efforts on mild gasification ($197). Continue supporting research including construction of a bench scale reactor ($691). (Total $888) (METC)	Continue modeling and system assessment efforts on mild gasification processes. ($612) (METC, AFR)
	Continue research for high Btu fuels including the production and characterization of the fuels. ($500) (LUMMUS)	Continue fuel upgrading research and development ($395) (Lummus)	Continue fuel upgrading research and development ($500) (Lummus)
	Fund technical and program management support. ($121)	Fund technical and program management support. ($119)	Fund technical and program management support. ($31)
	9,004	11,850	3,147

III. Activity Description: Surface Coal Gasification (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Great Plains Project	Complete post operations assessments and information archiving. Provide administrative closeout and divestiture contract implementation expenses. Title transferred Oct. 31, 1988 to Basin Electric Power Cooperative Association of Bismarck, ND. ($517) (ANL, Chicago Ops.)	No activity. ($0)	No activity. ($0)
	517	0	0
	21,557	23,428	8,485

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Advanced Extraction and Process Technology

FY 1990 Appropriation	$ 3,553
Geoscience and Advanced Extraction Research	
o Continue research on theory, instrumentation, and predictive models to determine reservoir heterogeneity and reservoir characteristics	+1,554
o Initiate jointly funded cooperative geotechnology research with universities and private industry on supporting research consistent with the Hydrocarbon Geoscience Research Strategy and the Oil and Gas Implementation plan	+3,000
Subtotal	+4,554
Supporting Technology and Environmental Research	
o Continue studies including crosscutting research in petroleum chemistry	+3,523
University Geoscience Research	
o Continue university-based research to advanced oil and gas extraction	+1,300
FY 1991 Congressional Budget Request	$12,930

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

PETROLEUM

I. Preface: Advanced Extraction and Process Technology

The Advanced Extraction and Process Technology (AEPT) Program pursues new concepts to achieve increases in efficiency and cost reduction of recovery techniques for oil, gas, oil shale, tar sands, and underground coal gasification (UCG). In addition, the program provides for fundamental research that is relevant to oil, gas, and oil shale. Three goals of the AEPT Program are: (1) to conduct fundamental research relevant to recovery of oil, gas, oil shale, tar sands, and UCG; i.e., the development of tools and techniques to measure and predict important properties and phenomena and to obtain the critical, fundamental data on these recovery processes; (2) to pursue application of discoveries from the frontiers of science and/or as yet unexplored new concepts which may achieve increases in the recovery of oil, gas, oil shale, tar sands, and UCG resources; and, (3) to develop a fossil energy-related knowledge base that will improve the economics of fossil fuel production and, in effect, expand the reserves.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Advanced Extraction and Process Technology, approximately 40% of the contracts are cost-shared and approximately 52 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

Fossil Energy in FY 1991 will initiate geotechnology research based on the Hydrocarbon Geoscience Research Strategy and the detailed Oil and Gas Implementation Plan jointly funded with consortia of states, industry, and universities. The program will be based on competitive procurement of appropriate performers for major parts of the implementation plan on a prioritized basis. The Government's portion of jointly funded research will not be used to pay for consortium overhead. The initial major portion of the program in AEPT will be to provide supporting research in the highest priority research classes in the implementation plan. Associated tasks in the Advanced Extraction and Process Technology program include reservoir description R&D; extraction and engineering R&D; and environmental and related R&D and technology transfer.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Fundamental Geoscience and Extraction Research ...	$2,709	$2,816	$7,370	+162
Supporting Technology and Environmental Research .	860	737	4,260	+478
University Geoscience Research	180	0	1,300	+100
Arctic and Offshore Research	452	0	0	0
Total, Advanced Extraction and Process Technology	$4,201	$3,553	$12,930	+264

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Sandia National Laboratory	$523	$99	$1,099	+1010
Lawrence Berkeley Laboratory	48	0	$560	100
Idaho National Engineering Laboratory	250	0	$500	100

III. Activity Description: Advanced Extraction and Process Technology (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Fundamental Geoscience and Extraction Research	Continue research on geoscience and extraction technology and development of advanced instrumentation to measure reservoir characteristics and thermal fronts. Initiate research to develop theory, instrumentation, and predictive models to determine reservoir heterogeneity. Utilize $560 of prior year funds for issued geoscience PRDA (FY88) to be awarded FY89. ($2,709) (NIPER, SNL, TBD)	Continue research on geoscience and extraction technology and development of advanced instrumentation to measure reservoir characteristics and thermal fonts ($2,787) (NIPER, SNL, Lewin, UNDEERC)	Continue existing research on geoscience and extraction technology and development of advanced instrumentation to measure reservoir characteristics and thermal fronts. Explore novel extraction and production methods for oil, gas, shale oil, and tar sands liquids, continue research to develop theory, instrumentation, and predictive models to determine reservoir heterogeneity and relate this information to the production, recovery location of bypassed oil and gas. ($4,296) (SNL, TBD)
	No activity. ($0)	No activity. ($0)	Initiate jointly funded cooperative geotechnology research with states, universities and private industry in supporting technology associated with the Geoscience Strategy and the Oil and Gas Implementation Plan. ($3,000) (TBD)
	No activity. ($0)	Fund technical and program management support. ($29)	Fund technical and program management support. ($74) (HQ)
	2,709	2,816	7,370
Supporting Technology and Environmental Research	Continue a reduced program of fundamental studies including crosscutting research in petroleum chemistry focusing on structural characterization and determination of a structure-property relation of heavy crudes, intermediate process streams, products, and byproducts. ($712) (NIPER, WRI)	Continue a program of fundamental studies including crosscutting research in petroleum chemistry focusing on structural characterization and determination of a structure-property relation of heavy crude, intermediate product stream, product, and byproduct. ($730) (NIPER)	Increase the program of fundamental studies including crosscutting research in petroleum chemistry focusing on structural characterization and determination of a structure-property relation of heavy crude, intermediate product stream, product, byproduct, coprocessing, gas processing, and biotechnology. ($4,218) (TBD)
	Continue, at a reduced level, research on pollutants in aquifers adjacent to oil, gas, and shale in situ recovery operations. ($73) (NIPER)	No activity. ($0)	No activity. ($0)
	No activity. ($0) ($75)	Fund technical and program management support. ($7)	Fund technical and program management support. ($42)
	860	737	4,260

III. Activity Description: Advanced Extraction and Process Technology (cont'd)

	FY 1989	FY 1990	FY 1991
University Geoscience Research	Initiate competitive fundamental geoscience research with consortia and others to advance oil and gas extraction as part of the geoscience PRDA under Fundamental Geoscience Extraction Research. ($180) (TBD)	Activity funded under Fundamental Geoscience Extraction Research. ($0)	Fund third year PRDA program of university-based, fundamental research to advance oil and gas extraction. ($1,287)
	No activity. ($0)	No activity. ($0)	Fund technical and program management support. ($13)
	180	0	1,300
Arctic and Offshore Research	Complete AORIS data base ($180). Develop technological basis for utilization of Alaskan natural gas resources ($263). (Total $443) (State of Alaska, BNL, Marine Board, SAIC)	No activity. ($0)	No activity. ($0)
	Fund technical and program management support. ($9)	No activity. ($0)	No activity. ($0)
	452	0	0
	4,201	3,553	12,930

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Enhanced Oil Recovery

FY 1990 Appropriation	$27,346
Heavy Oil	
o Continue base research efforts in steamflood mobility control mechanisms, alkaline flooding, and supporting analytical and numerical modeling studies	-29
o Complete Venezuela cooperative research efforts; continue reservoir characterization research	-114
o Initiate a technology transfer workshop program, extension service network and summer student program	+555
o Continue geoscience reservoir characterization efforts	+68
o Complete funding for efforts in novel extraction technology development	-679
o Continue fundamental studies on properties of reservoirs	+15
o Initiate program to study the environmental impact of heavy oil extraction technology	+800
o Provide technical and program management support	+6
Subtotal	+622
Light Oil	
o Reduce fundamental on research techniques for reservoir description, analysis and field characterization, conduct related technical and analytical assessments	-841

o Reduce funding for geoscience research efforts and redirect efforts to the new consortia program. Maintain National Lab efforts	-4,552
o Reduce efforts for microbial EOR research	-2,383
o Eliminate funding for METC in-house research on CO_2 miscible recovery efforts	-1,776
o Continue industry/state cooperative research efforts as well as NL/IND. partnership program	+615
o Continue the Improved Gravity Drainage Co. oil mining project	-1,907
o Initiate a technology transfer workshop, a network of extension service offices	+240
o Initiate a program to study the environmental impact of light oil extraction technology	+700
o Initiate a geoscience program jointly funded with consortia of states, industry, and universities	+10,000
o Provide technical and program management support	-100
Subtotal	-4
Tar Sands	
o Eliminate funding for the tar sands program	-859
Total FY 1991 Congressional Budget Request	$27,105

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

PETROLEUM

I. Preface: Enhanced Oil Recovery

The Enhanced Oil Recovery (EOR) Program addresses the DOE goals of ensuring the strategic security of liquid and gaseous fuel supplies in an environmentally sound manner. The basic strategy is to support a prioritized, integrated, and interdisciplinary research, development, and engineering program focused on the huge amount of oil left behind in reservoirs after conventional technologies have reached their technical and/or economic limit. The target oil is of two types: (a) oil that is mobile to water flood recovery techniques and which is not produced because of variability of fluid flow in complex reservoirs (heterogeneity); and (b) oil that is not mobile to water flood recovery techniques because of a variety of physical and chemical forces. It is recognized that all reservoirs contain both kinds of oil, and that some reservoirs represent more significant targets for future recovery than others. The near-term strategy is to identify the major target reservoirs and assure that the best proven extraction technology is considered. This will be accomplished through an aggressive combination of technical, economic, and environmental analysis and technology transfer. The goal is to assure continued access to these reservoirs. The mid-term focus is on improving our knowledge of reservoir architecture and its impact on fluid flow, and using this knowledge to improve the technical and environmental predictabiltiy and economic performance of advanced extraction technologies. The long-term program supports a strong technology base research effort which derives its requirements from constraints encountered in near- and mid-term research efforts as well as through seeking innovative, environmentally sound, and novel concepts from a broad spectrum of university, private, and national laboratory researchers.

Based on the Hydrocarbon Geoscience Research Strategy and the detailed Oil and Gas Implementation Plan, Fossil Energy will initiate in FY 1991 a key regional/reservoir research program that is jointly funded with consortia of states, industry, and universities. The program will be based on competitive procurements of appropriate performers for major parts of the implementation plan on a prioritized basis. The Government's portion of the jointly funded research will not exceed 50% and will not be used to pay for consortium overhead. The initial two major parts of the program in light oil will be to begin detailed work with the first two high priority classes of oil reservoirs. FY 1991 funding would address: 1) the near term activities associated with identifying the implemented technologies most amenable to maintaining oil production, the target operators and their constraints, the need for demonstration projects, and the development of plans to encourage the adoption of these technologies; 2) the midterm efforts associated with developing the class specific information needed to identify the most relevant advanced extraction technologies applicable to the class and to resolve technical barriers to their application; 3) activities associated with the identification of the most appropriate demonstration sites, and the preparation of associated reports, recommendations, and plans for four demonstration projects; and, with DOE approval, 4) initiation of the demonstrations, and activities for the technology transfer of the results of the demonstrations.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Enhanced Oil Recovery, approximately 57% of the contracts are cost-shared and approximately 50 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Heavy Oil	$4,245	$4,014	$4,636	+15
Light Oil	16,738	22,473	22,469	0
Tar Sands	2,600	859	0	-100
Total, Enhanced Oil Recovery	$23,583	$27,346	$27,105	-1

II. B. Major Laboratory and Facility Funding

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Morgantown Energy Technology Center	$960	$888	$0	-100
Sandia National Laboratory	$828	$1,495	$550	-63
Idaho National Engineering Laboratory	$1,000	$1,481	$0	-100
Lawrence Livermore National Laboratory	$550	$580	$350	-40
Los Alamos National Laboratory	$200	$197	$150	-24
Lawrence Berkeley National Laboratory	$300	$296	$300	+1
Brookhaven National Laboratory	$793	$841	$652	-22

III. Activity Description: Enhanced Oil Recovery

Program Activity	FY 1989	FY 1990	FY 1991
Heavy Oil	Continue basic research in mobility control mechanisms of steamflood additives for increasing sweep efficiency, foam generation and stability, reducing heat override, and correlation of physical reservoir properties with specific additive behavior ($564). Define the mechanisms by which foam increases oil recovery and develop analytical and numerical models ($300). Develop relative permeability and study capillary pressure data ($195). (Total $1,059) (NIPER, SUPRI, LBL)	Continue basic research in mobility control mechanisms of steamflood additivies for increasing sweep efficiency, and in alkaline flooding techniques ($395). Define the mechanisms by which foam is generated, retains stability, and reduces heat override; develop analytical and numerical models correlating physical reservoir properties with specific additive behavior; and develop relative permeability and capillary pressure data ($1,184). (Total $1,579) (NIPER, SUPRI/USC, LBL, TBD)	Refocus basic research in mobility control mechanisms and alkaline flooding to the investigation of the full spectrum of barriers to the recovery of remaining oil in high priority reservoir classes, with the objective of supporting the recovery of heavy oil from reservoirs not economically producible with current technology ($1,250). Initiate a cost-shared field test of alkaline flood technology ($300). (Total $1,550) (NIPER, SUPRI, LBL, TBD)
	Continue cooperative research with Venezuela on a task shared basis in petroleum reservoir characterization and recovery ($200). Conduct related planning, technical and analytical assessments, and coordination efforts ($264). (Total $464) (LLNL, UNITAR, ICF/Lewin)	Continue cooperative research with Venezuela on a task shared basis in petroleum reservoir characterization and recovery. Conduct related planning, technical and analytical assessments, and coordination efforts. ($454) (ICF/Lewin, LLL, UNITAR)	Conduct a study to identify remaining resource targets and plan and prioritize recovery strategies. Collect and analyze data on reservoir types and barriers to recovery. Conduct related planning, technical and analytical assessment, and coordination efforts ($340). Conduct a program of technology transfer, including meetings and workshops with independent producers in cooperation with their associations. Make operators aware of implemented technology and offer techniques for evaluation of their applicability. ($205). Initiate a network of "extension service" offices to promote the broad use of available technology ($250). Provide support to students for summer intern projects ($100). (Total $895) (UNITAR, TBD)

III. Activity Description: Enhanced Oil Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Heavy Oil (cont'd)	Continue a geoscience characterization program as a means for overcoming reservoir heterogeneity constraints to thermal sweep efficiencies and effective fluid displacement and recovery ($400). Develop new techniques for reservoir recovery zone measurements ($789). (Total $1,189) (Paramagnetic, Alaska, SNL, LLNL, TBD)	Continue a geoscience reservoir characterization program as a means for overcoming heterogeneity constraints to thermal sweep efficiences and effective fluid displacement and recovery. Develop new techniques for reservoir recovery zone measurements. ($877) (LLL, SNL, TBD)	Develop solutions to geological constraints effecting fluid flow in high priority reservoirs, develop new tools and technologies, utilizing cooperative agreements with states as appropriate ($945). (SNL, Alaska, NIPER, LLNL)
	Continue research in novel extraction approaches to presently deemed unrecoverable heavy oil resources through alternate reservoir access methods, advanced techniques for restimulating mature wells such as MEOR, and other new technologies ($500). Perform in situ combustion with oxygen ($153). (Total $653) (TBD, Rougeot)	Complete research in novel extraction approaches to presently deemed unrecoverable heavy oil resources through alternate reservoir access methods, advanced techniques for restimulating mature wells, oxygen fire flooding, and new technologies for efficient heat injection. ($679) (TBD, Union Carbide)	No activity. ($0)
	Continue fundamental studies on the chemical, physical and thermodynamic properties and behavior of reservoirs and injection fluid interactions. ($500) (SUPRI, LLNL, TBD, Alabama)	Continue fundamental studies on the chemical, physical and thermodynamic properties and behavior of reservoirs, and on reservoir and injection fluid interactions. ($305) (TBD)	Continue fundamental research started in FY 1990. ($400) (TBD)
	Continue cooperative tests in declining fields with $400 of prior year funds. Continue reservoir characterization efforts through INEL. ($300) (INEL)	Continue cooperative tests in declining fields with prior year funds. ($0)	No activity. ($0)
	No activity. ($0)	No activity. ($0)	Initiate a program of research into understanding and managing the environmental impacts of advanced extraction processes and effectively managing all classes of oil field production wastes. Assist states with the data management necessary for true risk-based regulatory decisions related to oil field operations including economically reversible plugging. ($500) (TBD)
	Fund technical and program management support. ($80)	Fund technical and program management support. ($40)	Fund technical and program management support. ($46)
	4,265	4,014	4,636

III. Activity Description: Enhanced Oil Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Light Oil	Continue broad based program of research in light oil recovery including new techniques for reservoir description. Conduct related planning, technical and analytical assessment to include geodiagnostic research to mitigate production declines caused by reservoir heterogeneities. ($4,203) (NIPER, ICF/Lewin, SNL, LANL, K&A)	Continue fundamental research of new techniques and methodologies for reservoir description, analysis and field verification, and conduct basic laboratory microbiological studies. Develop surfactant and polymer systems that are applicable over a wide range of reservoir conditions, methods of using gas flooding under miscible and immiscible conditions, methods of using foaming agents or entrainers for mobility control; and conduct studies on the adsorption of surfactants and foaming agents ($3,257). Conduct related planning, technical and analytical assessment to include advanced geodiagnostic and geophysical research to mitigate production declines caused by reservoir heterogeneities ($888). (Total $4,145) (NIPER, TBD)	Focus research on new technologies for reservoir description and analysis to produce more realistic and reliable descriptions of the remaining light oil resource target and use the results as a basis for program development and prioritization. Classify and prioritize reservoirs by geological type, target oil volume (mobile and immobile), and projected remaining economic life. Conduct related planning, data collection and analysis with geological and engineering evaluation methods to identify the highest priority targets and their specific barriers to further oil recovery; maintain tech base in fundamental research on chemical flooding and related efforts. ($3,304) (SNL, NIPER, BNL, TBD)
	Continue an effort in geoscience and reservoir characterization and related fundamental studies addressing definition of reservoir structure and composition, the response of reservoirs to injected fluids, and basic process chemistry and physics; and assessments of producible mobile and immobile oil. ($6,033) (TBD, Okla. G.S., ICF/Lewin, K&A, Columbia, Ultrasonics, Univ. of Texas, Univ. of Alabama, K&A, LANL)	Continue efforts in support of geoscience research focusing on reservoir characterization, simulation and field verification, definition of reservoir structure, composition, and the response of reservoirs to injected fluids. Conduct fundamental process chemistry and physics studies, and technology transfer. This program utilizes a total of $12,298 of which $2,991 is from prior year funding. ($9,307) (LLNL, OU/OGS, SNL, TBD, Lewin)	Continue efforts in geoscience research to develop solutions to geological constraints affecting fluid flow in high priority light oil reservoirs. Expand the application of existing technology to improve understanding and simulation of fluid flow problems due to reservoir heterogeneities. Improve interpretative methods for identifying locations within the reservoir of remaining oil (mobile and immobile) and the physical variations responsible for retaining the target oil. Maintain support to critical National Lab efforts and continue funding awards made under a previous PRDA. ($4,755) (LANL, NIPER, OU/OGS, TBD)
	Continue microbiological studies and explore the feasibility of other novel methods of extraction of residual oil resources. ($1,720) (TBD, NIPER, Alpha, BNL, OU/Tenneco)	Continue applied laboratory and field microbiological studies for the extraction of residual oil resources. Conduct MEOR & wettability studies. ($2,668) (TBD)	Provide support for a MEOR conference ($60). Continue research on thermophylic bacteria recovery techniques ($225). (Total $285) (BNL, TBD)

III. Activity Description: Enhanced Oil Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Light Oil (cont'd)	Continue in-house research in gas miscible, CO2 recovery with emphasis on understanding reservoir heterogeneity effects on gas flooding, development of mobility control strategies to affect significant increases in sweep efficiency, and on fundamental studies to identify displacement mechanisms requisite to efficient, effective and predictable application of CO2 and other gas recovery methods ($900). Conduct a cost-shared field test to assess the performance of mobility control concepts in the enhanced oil recovery process whenever CO2 is used to displace the oil ($600). Continue cost-shared studies to assess the merits of using CO2 mobility control concepts on the North Slope of Alaska. Expand activities to include the design of an in situ test site for mobility control assessment on the North Slope ($200). Conduct an engineering study to assess the potential impact of horizontal holes on the efficiency of enhanced oil processes using CO2 ($100). (Total $1,800) (METC)	Continue METC in-house research in CO2 miscible recovery with emphasis on understanding reservoir heterogeneity effects on gas flooding, development of mobility control strategies to affect significant increases in sweep efficiency, and on fundamental studies to identify displacement mechanisms requisite to efficient, effective and predictable application of CO2 and other gas recovery methods ($888). Conduct a cost-shared field test to assess the performance of mobility control concepts in the enhanced oil recovery process whenever CO2 is used to displace the oil. Continue cost-shared studies to assess the merits of using CO2 mobility control concepts on the North Slope of Alaska, including the design of an in situ test site for mobility control assessment of the North Slope. Conduct laboratory studies and field verification for the effects of reservoir heterogeneity, low porosity and permeability for CO2 flooding with large well patterns. ($888) (Total $1,776) (METC)	No activity. ($0)
	Continue industry/state cooperative work to rapidly demonstrate promising lab scale EOR concepts particularly applicable to mature light oil fields in production decline ($2,055). Continue Improved Gravity Drainage (IGD) Co. oil mining project ($587). (Total $2,642) (BNL, INEL, Paramagnetic, IGD)	Continue industry/state cooperative effort to demonstrate promising laboratory and field scale EOR concepts particulary applicable to mature light oil fields in production decline. Develop retrofit technology to reduce stripper well costs and low cost techniques for well workover and stimulation ($1,545). Continue efforts related to the Improved Gravity Drainage Oil Mining project that is being monitored by the Metairie site office. ($2,807) (Total $4,352) (IGD, TBD)	Continue the industry/state cooperative efforts to include university and national lab partners ($1,960). Conduct a program of technology transfer, including meetings and workshops with independent producers in cooperation with their associations, make operators aware of implemented technology and offer techniques for evaluation of their applicability ($120). Continue IGD oil mining project on a 52% industry/48% FE cost-shared basis. ($900). Initiate a network of "extension service" offices to promote the broad use of available technology ($120). Continue NL/Ind. partnership program ($200). (Total $3,300) (AGS, KGS, Ill. Texas, Louisiana, N. Mex., SNL, LANL, TBD, Paramag. Logging)

III. Activity Description: Enhanced Oil Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Light Oil (cont'd)	No activity. ($0)	No activity. ($0)	Initiate a program of research into understanding and managing the environmental impacts of advanced extraction processes and effectively managing all classes of oil field production wastes ($300). Assist states with data management necessary for true risk-based regulatory decisions related to oil field operations including economically reversible plugging ($200). Address risk to underground sources of drinking water posed by subsurface movement of injected fluids ($200). (Total $700) (TBD)
	No activity. ($0)	No activity. ($0)	Initiate a key regional/reservoir research program jointly funded with consortia of states, industry, and universities. The program will be based on competitive procurements of appropriate performers for major parts of the implementation plan on a prioritized basis. The Government's portion of jointly funded research will not exceed 50% and will not be used to pay for consortia overhead. ($10,000) (TBD)
	Fund technical and program management support. ($340)	Fund technical and program management support. ($225)	Fund technical and program management support. ($125)
	16,738	22,473	22,469
Tar Sands	Complete studies of in situ thermal recovery mechanisms and kinetics, environmental impact mitigation and of steady-state operating parameters for novel bitumen recycle surface extraction process. ($1,100) (WRI, TBD)	No activity. ($0)	No activity. ($0)
	Continue funding for optimization studies of alternative surface recovery processes. ($1,470) (Univ. of Utah, AK, AC)	Complete research efforts at the University of Utah and prepare the final report on the Univ. of Arkansas project. ($859) (Univ. of Utah, Univ. of AK)	No activity. ($0)

III. Activity Description: Enhanced Oil Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Tar Sands (cont'd)	Fund technical and program management support. ($30)	No activity. ($0)	No activity. ($0)
	2,600	859	0
	23,583	27,346	27,105

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Oil Shale

FY 1990 Appropriation	$9,014
Oil Shale Technology Base	
o Continue support of WRI characterization studies on reference shales	+15
o Eliminate in-house efforts on kinetics with modeling support, developing a system analysis capability, and applied studies	-736
o Complete hot-solids retorting research	-1,974
o Complete funding for specific eastern oil shale research	-2,559
o Complete rock fragmentation research	-296
o Complete engineering and environmental feasibility study for cost shared Western Oil Shale testing facility	-370
o Reduce program and technical support	-126
Subtotal	-6,046
Environmental Mitigation	
o Eliminate funding for all environmental studies	-2,306
FY 1991 Congressional Budget Request	$ 662

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

PETROLEUM

I. Preface: Oil Shale

Oil shale technology development involves the advancement of extraction and conversion processes to convert oil shale to a suite of liquid fuels. Therefore, this program supports the goal of ensuring the strategic security of liquid fuel supplies. Oil shale is a major resource base which will be usable at the critical time when the nation will likely rely more on alternative fuels. Technology advancements in shale oil recovery which lower the economic recovery threshold could make the U.S. independent of the risk of relying on foreign imports. To accomplish this goal, the Department of Energy has developed a program to provide a sound basis for the reduction of economic and environmental constraints to industrial development of technology U.S. oil shale resources and to increase the amount of resource that may be used economically. The program focuses on research to systematically study the chemistry, kinetics, and emissions related to eastern and western shale processing. Although the program is technically attractive, it is not affordable in light of current fiscal constraints and does not have as high priority as the other technologies that are supported in FY 1991.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front end where the technical risk is the highest than at the more advanced stages. Within Oil Shale, approximately 54% of the contracts are cost-shared and approximately 23 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Oil Shale Technology Base	$7,463	$6,708	$662	-90
Environmental Mitigation	3,067	2,306	0	-100
Total, Oil Shale	$10,530	$9,014	$662	-93

II. B. Major Laboratory and Facility Funding

	FY 1989	FY 1990	FY 1991	% Change
Morgantown Energy Technology Center	$980	$967	$0	-100
Sandia National Laboratory	$400	$296	$0	-100
Lawrence Livermore National Laboratory	$3,000	$2,961	$0	-100

III. Activity Description: Oil Shale (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Oil Shale Technology Base	Complete funding for specific eastern oil shale research including pressurized fluidized-bed hydroretorting ($2,200); shale oil-modified asphalt ($300); complete extraction research project through Idaho Operations Office ($100); and support eastern oil shale symposium ($5). (Total $2,605) (IGT, State of Indiana, KEC)	Complete funding for specific eastern oil shale research including pressurized fluidized-bed hydroretorting ($2,076) shale oil modified asphalt ($99) Kentort scale-up ($354) Eastern Shale Symposium support ($5); novel retorting/ Pulsed Combustors ($25). (Total $2,559) (IGT, State of Indiana, KEC, WV Univ., TBD)	No activity. ($0)
	Continue kinetic and applied research with modeling support ($799). Continue developing a systems analysis capability ($260). Provide technical support to Laramie Project Office ($100). Continue hot solids retorting research ($2,000). (Total $3,159) (LLNL, METC, W.Va. Univ.)	Continue METC in-house research on kinetics with modeling support, developing a systems analysis capability, and conduct applied studies ($736). Complete hot-solids retorting research ($1,974). Provide technical support for LPO ($60). (Total $2,770) (METC, LLNL, WRC)	No activity. ($0)
	No activity. ($0)	Initiate engineering and environmental feasibility study for cost-shared Western Oil Shale test facility. ($370) (TBD)	No activity. ($0)
	Complete SNL studies of eastern blasting-based mining operations. ($400) (SNL)	Complete SNL studies of eastern blasting-based mining operations. ($296) (SNL)	No activity. ($0)
	Continue funding for WRI to perform characterization of reference shales and conducted other specific Western Oil Shale research. ($1,182). Storage of reference shale ($7) (Total $1,189) (WRI, TerraTek, Inc.)	Continue funding for WRI to perform characterization of reference shales. ($641) (WRI)	Continue funding for WRI to do characterization studies on reference shales. ($656) (WRI)
	Support Western Oil Shale Symposium. ($5) (Colo. Sch. of Mines)	Support Western Oil Shale Symposium. ($5) (Colo. Sch. of Mines)	No activity. ($0)
	Continue technical and program management support. ($105)	Continue technical and program management support. ($67)	Continue technical and program management support. ($6)
	7,463	6,708	662
Environmental Mitigation	Complete research on the modeling of processed shale piles. ($162) (Univ. of WY)	No activity. ($0)	No activity. ($0)
	Continue hot solids retorting-related environmental research. ($1,000) (LLNL)	Complete hot solids retorting-related environmental research. ($987) (LLNL)	No activity. ($0)

III. Activity Description: Oil Shale (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Environmental Mitigation (cont'd)	Provide environmental support to Laramie Project Office. ($132) (LPO)	Provide environmental support to Laramie Projects Office. ($60) (LPO)	No activity. ($0)
	Continue funding for research at WRI to develop environmental data for the chemical stability of spent shale piles, retort abandonment, environmental methodology for oil shale development, and process stream characterization. ($1,657) Storage of reference shale ($11) (Total $1,668) (WRI)	Continue funding for research at WRI to develop environmental data for the chemical stability of spent shale piles, retort abandonment, environmental methodology for oil shale development, and process stream characterization. ($367) (WRI)	No activity. ($0)
	No activity. ($0)	Conduct analytical methods development, studies of mechanisms of pollutant generation and fate, process stream characterization, and development of environmental data base. Conduct planning, technical and analytical assessments. ($257) (METC)	No activity. ($0)
	No activity. ($0)	Conduct Eastern solid waste studies ($197); environmental and kinetics modeling ($45) (Total $242) (TBD, WV Univ.)	No activity. ($0)
	No activity. ($0)	Initiate engineering and environmental feasibility study for cost-shared Western Oil Shale test facility. ($370) (TBD)	No activity. ($0)
	Continue technical and program management support. ($105)	Continue technical and program management support. ($23)	No activity. ($0)
	3,067	2,306	0
	10,530	9,014	662

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Unconventional Gas Recovery

FY 1990 Appropriation	$14,429
Eastern Gas Shales	
o Reduce in-house efforts in the use of predictive models and system studies	-254
o Complete eastern tight gas production verification tests	-494
o Conduct fractured reservoir mapping studies	+750
o Complete horizontal drilling/production tests	+402
o Complete evaluation of horizontal wells as a recovery concept and activities for advancements in directional drilling techniques	-494
o Complete multiple strata studies	-487
o Decrease funding for technical and management support	-5
Subtotal	-582
Western Tight Gas Sands	
o Eliminate in-house efforts in the use of reservoir/stimulation models, database and systems analysis	-506
o Continue work on natural fracture origins in the drilling/stimulation of a slant hole	-249
o Complete geologic and resource assessments in the Green River and Uinta Basins	-247

o Complete extrapolation of MWX results	+513
o Decrease funding for technical and management support efforts	-4
Subtotal	-493
Environmental and Advanced Research	
o Decrease funding for in-house research for gas hydrates, deep source gas and gas to liquids	-564
o Complete verification of deep gas potential	-740
o Complete program for hydrate research at the University of Alaska	-84
o Complete insitu testing on North Slope hydrate properties	-99
o Decrease funding for secondary gas recovery research	-2,324
o Eliminate funding for research for the detection of offshore gas hydrates	-348
o Complete studies on conversion processes, novel concepts, and catalytic systems	-1,283
o Eliminate funding for research on optimization of natural gas fired fuel cells	-740
o Initiate effort to improve horizontal well economics	+1,000
o Initiate jointly funded reservoir research with consortia states, industry, and universities	+4,000
o Continue research of deep sedimentary basins	+18
o Initiate effort to develop diagnostics for fractured reservoirs	+1,520
o Decrease funding for technical and management support	-36
Subtotal	+320
FY 1991 Congressional Budget Request	$13,674

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

GAS

I. Preface: Unconventional Gas Recovery

The purpose of the Unconventional Gas Recovery (UGR) program is to develop advanced technologies for the extraction of natural gas from currently unrecoverable gas resources. These resources include lenticular tight gas sands, Eastern Devonian shales, gas hydrates, coalbed methane, and deep source gas. Lenticular tight gas sand resources are gas bearing formations characterized by low permeability and limited reservoir extents. Although tight gas sands occur throughout the U.S., the principal resources are located in Western basins. The principal gas bearing Eastern Devonian shales are contained in the Appalachian Basin, the Michigan Basin, and the Illinois Basin. This resource exhibits low permeability and porosity, and characteristically has an extensive system of natural fractures of varying degrees. Areas of high natural fracture density tend to offer the greatest potential for economic gas production. Gas hydrates are solid ice-like compounds in which gas molecules are entrapped and bound to water molecules. Gas hydrates have been found occurring naturally in sediments directly beneath and within thick permafrost zones and in deep ocean areas. Coalbed methane is found trapped within the micropores of coal or in the natural fractures of coalbeds. Deep source gas is currently believed to consist of methane originating deep within the earth's crust. This resource is in the embryonic stage of research and will continue as such until more fundamental knowledge is acquired. Recent data indicate that gas recovery from certain types of conventional reservoirs may be 50 - 60% of the original gas-in-place. The Secondary Gas Recovery project is demonstrating new and improved technologies for increased recovery of this in-place-gas.

Gas resources recovered by UGR techniques have the potential to make a significant contribution to the nation's future economy by augmenting current conventional supplies. The near-term strategy is to add to the nation's gas production through improved recovery from conventional reservoirs. This will be accomplished through the successful completion of the Secondary Gas Recovery Project. The program's mid-term focus is on the field testing of advanced stimulation and horizontal and slant well technologies in selected unconventional reservoirs. In addition, the program supports a strong long term basic research effort to identify and quantify new resources such as gas hydrates and gas from deep sources. All of these strategies support the overall goal of ensuring the strategic security of the nation's gas supply.

Based on the Hydrocarbon Geoscience Research Strategy and the detailed Oil and Gas Implementation Plan, in FY 1991 Fossil Energy will initiate a key regional/reservoir research program jointly funded with consortia of states, industry and universities. The program will be based on competitive procurements of appropriate performers for major parts of the implementation plan on a prioritized basis. The Government's portion of jointly funded research will not exceed 50% and will not be used to pay for consortium overhead. The initial major parts of the program will be in two areas: 1) development of a natural gas data system including data for both unconventional and conventional gas reservoirs; and 2) development of a classification system for conventional reservoirs. As with the oil reservoir classification system the classification system for gas reservoirs will be based on depositional environments and recovery efficiencies. The development of such a system will enable DOE to determine future research and development needs and priorities in conventional gas research.

Regarding private sector participation, emphasis is placed on cost-sharing of Federally-sponsored R&D to facilitate the transfer of technology to the private sector and to reduce Federal expenditures. The degree of cost-sharing varies with the technology and industry involved and the project's position on the development path. The amount is generally lower at the front and where the technical risk is the highest than at the more advanced stages. Within Unconventional Gas Recovery, approximately 25% of the contracts are cost-shared and approximately 60 percent of the funding is the private sector's cost-sharing contribution. It is believed that this percentage of cost-sharing by the private sector will continue in this program. Also, organizations such as EPRI, GRI and AGA conduct related research that supports the ongoing objectives of various Fossil Energy (FE) projects. This additional participation provides an even greater cost-shared industry contribution to FE programs.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Eastern Gas Shales	$3,075	$3,276	$2,694	-18
Western Tight Gas Sands	3,325	3,473	2,980	-14
Environmental and Advanced Research	4,984	7,680	8,000	+4
Total, Unconventional Gas Recovery	$11,384	$14,429	$13,674	-5

II. B. Major Laboratory and Facility Funding

Sandia National Laboratory	$0	$296	$498	+68
Morgantown Energy Technology Center	$1,386	$1,866	$542	-71
Lawrence Livermore National Laboratory	$250	$247	$0	-100
Los Alamos National Laboratory	$250	$247	$0	-100

III. Activity Description: Unconventional Gas Recovery

Program Activity	FY 1989	FY 1990	FY 1991
Eastern Gas Shales	Continue in-house work and updating of the technical data base and predictive models associated with reservoir and stimulation performance; continue systems studies in support of production strategies. ($574) (METC)	Continue in-house work and updating of the predictive models associated with reservoir and stimulation performance; continue systems studies in support of production strategies. ($506) (METC)	Continue in-house work and updating of predictive modeling capability; continue systems studies in support of production strategies. ($252) (METC)
	Continue activities for evaluating horizontal wells as an improved recovery concept utilizing $831 of prior year funds, and for advancements in directional drilling techniques. ($1,472) (Geoscience Elect. Corp., BDM Corp., Columbia Gas)	Complete activities for evaluating horizontal wells as a recovery concept, and for advancements in directional drilling techniques. ($494) (BDM, Columbia Gas)	No activity. ($0)
	Conduct technical assessment of production from multiple strata (coal, shale, sand). ($170) (Beckley College)	Initiate field tests to verify concepts developed for production of gas from multiple strata. ($887) (Beckley College)	Complete field tests to verify concepts developed for production of gas from multiple strata. ($500) (TBD)
	Initiate eastern tight gas production verification tests in WV, VA, KY and TN. ($797) (TBD)	Complete eastern tight gas production verification tests in WV, KY and TN. ($494) (TBD)	No activity. ($0)
	No activity. ($0)	No activity. ($0)	Conduct, via state geologic surveys, fractured reservoir mapping studies. ($750) (TBD)
	No activity. ($0)	Initiate medium radius horizontal drilling/production tests in shallow, geologically complex reservoirs. ($763) (TBD)	Complete medium radius horizontal drilling/production tests in shallow, geologically complex reservoirs. ($1,165) (TBD)

III. Activity Description: Unconventional Gas Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Eastern Gas Shales (cont'd)	Continue technical and program management support. ($62)	Continue technical and program management support. ($32)	Continue technical and program management support. ($27)
	3,075	3,276	2,694
Western Tight Gas Sands	Extrapolate results of the Multiwell Experiment (MWX) to new areas of potential in Mesa Verde tight gas formations. ($125) (CER)	Continue extrapolation of MWX results to new areas of potential in Mesa Verde tight gas formations. ($987) (CER)	Complete extrapolation of MWX results to other areas of gas potential. ($1,500) (CER)
	Continue geologic and resource assessments of the Green River and Uinta Basins. ($200) (USGS)	Complete geologic and resource assessments of the Green River and Uinta Basins. ($247) (USGS)	No activity. ($0)
	Conduct studies to determine factors influencing production from tight gas formations and initiate the drilling/stimulation of a slant well. ($2,414) (TBD)	Continue studies to determine factors influencing production from tight gas formations ($296), and continue drilling/stimulation of a slant well. ($1,403). (Total $1,699) (SNL, CER)	Continue studies on developing concepts for the origin of natural fractures in tight sand basins ($498); complete stimulation research at slant/horizontal well (MWX site) ($952). (Total $1,450) (SNL, TBD)
	Continue in-house support to update predictive reservoir and stimulation models; expand technical data base; continue systems analyses in support of production strategies and forecasts of regional production patterns in light of multiwell results and reservoir heterogeneity. ($519) (METC)	Continue in-house work with predictive reservoir and stimulation models; expand technical data base; continue systems analyses in support of production strategies and forecasts of regional production patterns in light of multiwell results. ($506) (METC)	No activity. ($0)
	Continue technical and program management support. ($67)	Continue technical and program management support. ($34)	Continue technical and program management support. ($30)
	3,325	3,473	2,980
Environmental and Advanced Research	Continue in-house geologic, geophysical, and geochemical studies in support of a program to explore deep source gas generation potential for sediments subducted due to plate tectonic convergence. ($100) (METC)	Continue in-house geological, geophysical and geochemical efforts to study deep gas generation potential for sediments subducted by plate tectonic convergence. ($247) (METC)	Continue in-house geologic, geophysical and geochemical studies of deep gas generation potential in subduction zones and associated sediments. ($290) (METC)
	Continue geophysical efforts in Western Washington for verification of deep gas potential. ($670) (USGS/GSC)	Complete geophysical efforts in Western Washington for verification of deep gas potential. ($740) (USGS/GSC)	No activity. ($0)

III. Activity Description: Unconventional Gas Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Environmental and Advanced Research (cont'd)	No activity. ($0)	Initiate research on geologic/ geochemical studies on origin and migration of gas in deep sedimentary basins. ($482) (TBD)	Continue research on geologic/ geochemical studies on origin and migration of gas in deep sedimentary basins. ($500) (TBD)
	Conduct lab/modeling studies to determine potential problems with heavy oil reservoirs containing hydrates. ($100) (U. of Alaska)	Complete lab/modeling studies to determine potential problems with heavy oil reservoirs that contain hydrates. ($84) (Univ. of Alaska)	No activity. ($0)
	Continue in situ testing on the North Slope to acquire hydrate properties. ($102) (USGS)	Complete in situ testing on the North Slope to acquire hydrate properties. ($79) (USGS)	No activity. ($0)
	Conduct geologic/geophysical studies in offshore Gulf Coast to determine location and characteristics of hydrates. ($68) (Col. Gas)	No activity. ($0)	No activity. ($0)
	No activity. ($0)	Initiate effort to develop geophysical techniques for the detection of offshore gas hydrates. ($348) (TBD)	No activity. ($0)
	No activity. ($0)	No activity. ($0)	Initiate effort to improve economics of air-drilled horizontal wells through improvements in drilling and completion techniques. ($1,000) (TBD)
	Continue in-house research to explore on a fundamental basis geophysical and geochemical properties of gas hydrates and to examine gas hydrate recovery strategies based on an understanding of the gas release mechanisms. ($130) (METC)	Continue in-house research to understand gas hydrates and the production mechanism; develop predictive models to design and test concepts for recovery. ($262) (METC)	No activity. ($0)
	Continue in-house activities on catalyst systems for converting natural gas to liquids ($384). Continue lab studies on conversion processes and novel concepts ($500). Conduct additional studies on catalytic systems and innovative approaches to gas conversion ($330). (Total $1,214) (METC, LLNL, LANL, Lehigh Univ., TBD)	Continue in-house activities on catalyst systems for converting natural gas to liquids ($345). Complete lab studies on conversion processes and novel concepts ($494). Conduct additional studies on catalytic systems and innovative approaches to gas conversion ($789). (Total $1,628) (METC, LLNL, LANL, Lehigh Univ., TBD)	No activity. ($0)

III. Activity Description: Unconventional Gas Recovery (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Environmental and Advanced Research (cont'd)	Continue the secondary gas recovery program on a cost shared basis with industry. ($2,500) (GRI/Tex. BEG)	Continue the secondary gas recovery program in conjunction with industry. ($2,974) (GRI/Tex. BEG)	Complete the cost-shared secondary gas recovery project in conjunction with industry. (Cost-sharing: TBD; historically 62% ind./38% FE) ($650) (GRI/Tex. BEG)
	No activity. ($0)	No activity. ($0)	Establish and develop diagnostics for evaluating and characterizing natural and induced fractured gas reservoirs. ($1,520) (TBD)
	No activity. ($0)	No activity. ($0)	Initiate development of a natural gas data system for both unconventional and conventional reservoirs. Initiate development of a gas classification system for conventional reservoirs based on depositional environments and recovery efficiencies. This research will be jointly funded with a consortia of states, industry and universities. ($4,000) (TBD)
	No activity. ($0)	Initiate research for the optimization of natural gas fired fuel cells. ($740) (TBD)	No activity. ($0)
	Continue technical and program management support. ($100)	Continue technical and program management support. ($76)	Continue technical and program management support. ($40)
	4,984	7,680	8,000
	11,384	14,429	13,674

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Program Direction and Management Support

FY 1990 Appropriation	$68,238
Headquarters Program Direction	
o Decrease in funding for salaries and benefits at Headquarters	-431
o Decrease in funding for travel in support of program activities	-237
o Decrease in funding for contract services for printing, support services, computer services, conference fees, SBIR	-5,601
Subtotal	-6,269
ETC Program Direction	
o Decrease in funding for salaries and benefits at Morgantown Energy Technology Center, Pittsburgh Technology Center, Bartlesville Projects Office and the Metairie Site Office	-4,031
o Increase in travel funds for the Energy Technology Center staff	+116
o Decrease in contract services that supports facility operations, maintenance, finance, administrative support	-26,251
Subtotal	-30,166
Federal Inspector for the Alaska Gas Pipeline	
o Increase in funding for salaries and benefits, and for support and monitoring activities	+21
FY 1991 Congressional Budget Request	$31,824

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

PROGRAM DIRECTION AND MANAGEMENT SUPPORT

I. Preface: Program Direction and Management Support

This activity provides funding for salaries, benefits and overhead expenses for management of the Fossil Energy program at Headquarters and the Energy Technology Centers. The Headquarters staff is responsible for overall program direction that includes implementing DOE policy, communicating guidance consistent with that policy to the Energy Technology Centers (ETC), establishing program objectives, developing program plans and evaluating alternative program strategies, developing and defending budget requests to the Office of Management and Budget and to the Congress, approving procurement plans, monitoring work progress, evaluating projects, and approving revisions in work plans as required to attain program goals. The Energy Technology Centers and project and site offices perform the day-to-day project management functions of assigned programmatic areas that include monitoring Fossil Energy contracts and National Laboratory activities, developing project budgets, implementing procurement plans, and other program and site support activities necessary to achieve program objectives. The Office of the Federal Inspector for the Alaska Natural Gas Transportation System is responsible for coordinating all Federal activities pertaining to the construction and initial operation of the pipeline. The Office of the Federal Inspector also enforces federal laws and permits, and monitors activities that affect the system.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Headquarters Program Direction:				
Salaries and Benefits	$9,035	$9,160	$8,729	-5
Travel	601	691	454	-34
Contract Services	3,871	6,374	773	-88
Subtotal, Headquarters Program Direction	13,507	16,225	9,956	-39
ETC Program Direction:				
Salaries and Benefits	18,895	20,356	16,325	-20
Travel	936	966	1,082	+12
Contract Services	30,990	30,443	4,194	-86
Subtotal, ETC Program Direction	50,821	51,767	21,601	-58
Federal Inspector for the Alaskan Natural Gas Transportation System				
Salaries and Benefits	219	219	237	+8
Travel	7	10	10	0
Contract Services	23	17	20	+18
Subtotal, Federal Inspector	249	246	267	+9
Total, Program Direction	$64,577	$68,238	$31,824	-53

II. D. Major Laboratory and Facility Funding

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Morgantown Energy Technology Center	$25,432	$25,499	$10,629	-58
Pittsburgh Energy Technology Center	$23,640	$24,433	$9,853	-60
Bartlesville Project Office	$1,749	$1,736	$789	-56

III. Activity Description: Program Direction and Management Support

FY 1989	FY 1989	FY 1990	FY 1991
Headquarters Program Direction	SALARIES/BENEFITS Provide funds for 152 FTEs at Headquarters. This staff implements and communicates policy to the ETCs, sets program objectives, develops program plans and evaluates alternative strategies; develops and defends budget requests; approves procurement plans; and monitors work progress. The total estimate for salaries and benefits is $9,622 with $587 from prior year funds. ($9,035)	Provide funds for 110 FTEs at Headquarters. This staff implements and communicates policy to the ETCs, sets program objectives, develops program plans and evaluates alternative strategies; develops and defends budget requests; approves procurement plans; and monitors work progress. ($9,160)	Provide funds for 123 FTEs at Headquarters. This staff implements and communicates policy to the ETCs, sets program objectives, develops program plans and evaluates alternative strategies; develops and defends budget requests; approves procurement plans; monitors work programs. ($8,729)
	TRAVEL Provide funds for travel in support of the activities stated above. Both domestic and international travel is performed. ($601)	Provide funds for travel in support of the activities stated above. Both domestic and international travel is performed. ($691)	Provide funds for travel in support of the activities stated above. Both domestic and international travel is conducted. ($454)
	CONTRACT SERVICES Provide for contractual services that are generic to the entire FE program. Included are items such as printing, computer services, technical and management support services. The total amount for contract services is $4,212 with $341 from prior year funds. ($3,871) (TBD)	Provide for contractual services that are generic to the entire FE program. Included are items such as printing, computer services, technical and management support services, SBIR conferences, etc. The total amount for SBIR is $3,948. (6,374) (TBD)	Provide for contractual services that are generic to the entire FE program. Included are items such as printing, computer services, technical and management support services. Fund SBIR in the amount of $1,799 from prior year funds within the Fossil Energy R&D account. ($773) (TBD)
	13,507	16,225	9,956

III. **Activity Description:** Program Direction and Management Support (cont'd)

FY 1989	FY 1989	FY 1990	FY 1991
ETC Program Direction	SALARIES/BENEFITS Provide funds for ETC, BPO and Metairie staff of 359 FTEs. Activities of the staff include contract and lab monitoring, development and maintenance of project, budget and procurement plans, and other activities related to program and site support. ($18,895)	Provide funds for ETC, BPO and Metairie staff of 348 FTEs. Activities of the staff include contract and lab monitoring, development and maintenance of project, budget and procurement plans, and other activities related to program and site support. ($20,356)	Provide funds for ETC, BPO and Metairie staff of 301 FTEs. Activities of the staff include contract and lab monitoring, development and maintenance of project, budget and procurement plans. and other activities related to program and site support. ($16,325)
	TRAVEL Provide funds for travel in support of the coordination of the above activities in the attainment of program goals, both on the domestic front and abroad. ($936)	Provide funds for travel in support of the coordination of the above activities in the attainment of program goals, both on the domestic front and abroad. ($966)	Provide funds for travel in support of the coordination of the above activities in the attainment of program goals, both on the domestic front and abroad. ($1,082)
	CONTRACT SERVICES Provide funds for facility operations, maintenance, finance and administrative support and other costs not appropriately chargeable to R&D projects, in support of this level of FTEs. Total of $31,334 which includes $334 prior year funds at METC. ($30,990)	Provide funds for facility operations, maintenance, finance and administrative support and other costs not appropriately chargeable to R&D projects, in support of this level of FTEs. ($30,443)	Provide partial funding of facility operations, maintenance, finance, ACBS support, administrative support. Additional costs will be charged to R&D projects. ($4,194)
	50,821	51,767	21,601
Federal Inspector for Alaskan Pipeline	Provide funds for salaries for 2 FTEs and related expenses for administrative, support and monitoring activities. ($249)	Provide $246 for salaries of 2 FTEs, and related expense for support and monitoring activities. ($246)	Provide funds for salaries of 3 FTEs, and support and monitoring activities. ($267)
	249	246	267
	64,577	68,238	31,824

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Plant and Capital Equipment

FY 1990 Appropriation	$12,037
Capital Equipment	
o Continue capital equipment needs in all FE R&D activities conducted at the ETC's, BPO, and National Laboratories	+7
o Decrease funding for computer capacity upgrade at PETC	-214
Subtotal	-207
Construction	
o Decrease funding for general plant projects at ETC's and BPO	-1,344
o Eliminate funding for chemical engineering laboratories project at PETC	-1,871
o Continue construction of Administrative Facilities at PETC	-2,272
o Complete funding for METC administrative building	-3,948
Subtotal	-9,435
FY 1991 Congressional Budget Request	$2,395

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

PLANT AND CAPITAL EQUIPMENT

I. Preface: Plant and Capital Equipment

Capital equipment is purchased annually to replace obsolete equipment so that the Energy Technology Centers (ETCs) and the National Laboratories analytical capabilities are appropriately upgraded. General plant projects are essential to the safe, efficient operation of the ETCs and are currently dedicated to a number of improvements, alterations and additions at each of the Energy Technology Centers. This activity also includes new plant construction at various Fossil Energy facilities.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Capital Equipment	$500	$1,480	$1,273	-14
Construction	21,250	10,557	1,122	-89
Total, Plant and Capital Equipment	$21,750	$12,037	$2,395	-80

II. B. Major Laboratory and Facility Funding

None

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
Capital Equipment	Provide centralized funding for capital equipment needs in all FE R&D activities conducted at the ETCs, National Laboratories, and BPO. Total of $638 which includes $138 prior year funds. ($500)	Provide centralized funding for capital equipment needs in all FE R&D activities conducted at the ETCs, National Laboratories, and BPO. ($493)	Provide centralized funding for capital equipment needs in all FE R&D activities conducted at the ETC's National Laboratories, and BPO. ($500) (TBD)
	No activity. ($0)	Initiate upgrading PETC computer capacity. ($987)	Provide funding for additional computing capacity at Pittsburgh ETC to support new activities that include business and technical modeling, cost/price and financial analysis and tracking of contract deliverables. ($773) (TBD)
	500	1,480	1,273

III. Activity Description: Plant and Capital Equipment (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Construction	Provide for general plant projects at ETCs and BPO. Total of $2,888 which includes $1,138 prior year funds for various GPP projects to be awarded FY 89. ($1,750)	Provide for General Plant Projects (GPP) at the ETCs and BPO. Total of $2,617 which includes $840 of prior year funds. ($1,777)	Provide for General Plant Projects (GPP) at the ETCs and BPO. ($433)
	Continue design and initiate construction of chemical engineering laboratories project at PETC. ($1,250)	Continue construction of chemical engineering laboratories project at PETC. ($1,871)	No activity. ($0)
	Continue design and initiate construction of program support facility at PETC. ($1,250)	Continue construction of program support facility at PETC. Total of $3,216 which includes $255 of prior year funding. ($2,961)	Continue construction of program support facility at PETC. ($689)
	Continue construction of administrative wing at METC. ($4,500) (METC)	Complete construction of administrative wing at METC. ($3,948) (METC)	No activity. ($0)
	Provide funds to complete DOE portion of cost of project at the University of Oklahoma in Norman, Oklahoma. ($3,500)	No activity. ($0)	No activity. ($0)
	Provide funds to complete DOE portion of cost of project at the National Research Center for Coal and Energy at WVU. ($9,000)	No activity. ($0)	No activity. ($0)
	21,250	10,557	1,122
	21,750	12,037	2,395

A. Construction Project Summary

Project No.	Project Title	Total Prior Year Obligations	FY 1990 Appropriated	FY 1991 Request	Unappropriated Balance	TEC
Plant Funded						
89-F-103	Program Support Facility Renovation	1,500	2,961	689	3,541	8,691
GP-F-100	General Plant Projects	0	1,777	433	0	2,210
		$1,500	$4,738	$1,122	$3,541	$10,901

IV. B.(a) Plant Funded Construction Project

1. Project Title and Location:

89-F-103
Program Support Facility Renovation
Pittsburgh Energy Technology Center
Pittsburgh, Pennsylvania

Project TEC: $8,691 *
Start Date: 2nd QTR, FY 1990
Completion Date: 3rd QTR, FY 1992

2. Financial Schedule

Fiscal Year	Appropriated	Obligations	Costs
1988	$0	$250 *	$250 *
1989	$1,250	$995	$0
1990	$2,961	$3,216	$2,730
1991	$689	$689	$1,826
1992	$3,541	$3,541	$2,292
1993			$1,593

3. Narrative

(a) This project proposes to develop an existing building into a total Program Support Facility. The project will entail developing approximately 59,350 square feet of unused interior space, as well as, upgrading the building's exterior envelope and adjacent site into a fully integrated Program Support Facility.

(b) The unused and vacant area in the Program Support Facility must be developed to utilize present empty space; secure office space for the Project Management Group, which must now compete with other groups in the Research and Development Center; complete the final phase of the Program Support Facility as an identifiable, unified, integral site; and complete construction of a PETC Facility Conference Center.

4. Total Project Funding (BA):

	Prior Years	FY 1989	FY 1990	FY 1991 Request	To Complete
Construction	$250 *	$1,250	$2,961	$689	$3,541
Capital Equipment	$0	$0	$0	$0	$0
Operating Expenses	$0	$0	$0	$0	$0

* GPP funds in the amount of $250K were used for PE&D.

IV. B.(b) Plant Funded Construction Project

1. Project Title and Location: GP-F-100
General Plant Projects

Project TEC: $433
Start Date: FY 1991
Completion Date: Various

2. Financial Schedule

Fiscal Year	Appropriated	Obligations	Costs
1991	$433	$433	$120
1992	$0	$0	$313

3. Narrative

The funds provide for capital construciton items which are not of sufficient magnitude to warrant line-item budgetary considerations, yet are essential to the safe, efficient operation of the Energy Technology Centers. These funds are dedicated to a number of improvements, alterations, and additions that include, but are not limited to OSHA and DOE health and safety requirements; security enhancement; building demolition; perimeter fencing; roadway upgrading; and other renovation of facilities to provide for efficient and, particularly, safe use of existing space.

4. Total Project Funding (BA): N/A

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Cooperative Research and Development

FY 1990 Appropriation	$4,631
Cooperative Research and Development	
o Eliminate earmarked funding for WRI and UNDEERC	-4,631
FY 1991 Congressional Budget Request	$ 0

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

COOPERATIVE RESEARCH AND DEVELOPMENT

I. Preface: Cooperative Research and Development

The Cooperative Research and Development program was created by P. L. 101-121 Dated, October 23, 1989. Funding was transferred from other activities in Fossil Energy R&D to initiate programs at the Western Research Institute (WRI) and the University of North Dakota Energy and Environmental Research Center (UNDEERC) to support cooperative research projects at those institutes where non-Federal partners contribute at least 50% of the funding. The Administration believes that earmarking funds in this way is inappropriate. WRI and UNDEERC can compete with other research performers within the individual R&D program areas.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Cooperative Research and Development......	$0	$4,631	0	-100

II. B. Major Laboratory and Facility Funding

None

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
Cooperative Res. and Development	No activity ($0)	Provide support for cooperative research programs at WRI ($2,291) and UNDEERC ($2,340) which are 50-50 cost-shared with non-Federal clients (Total $4,631) (WRI, UNDEERC)	No activity ($0)
	0	4,631	0

DEPARTMENT OF ENERGY
FY 1991 OMB BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Environmental Restoration

FY 1990 Appropriation	$1,029
CERCLA Remedial Actions	
o Continue, at a reduced level, funding of DOE share of Ft. Lewis trust fund Phase II cleanup of Western Superfund site	-849
o Fund cleanup of Rockwell International site	+532
FY 1991 OMB Budget Request	$ 712

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

FOSSIL ENERGY ENVIRONMENTAL RESTORATION

I. Preface: Fossil Energy Environmental Restoration

In May 1983, the Pittsburg and Midway Coal Mining Co. (P&M), the DOE contractor/operator of the Ft. Lewis Pilot Plant (Tacoma, Washington), was notified by EPA that they were potentially liable along with hundreds of others for cleanup of the Western Processing Site. This pilot plant was part of Fossil Energy's Solvent Refined Coal (SRC-II) demonstration plant project, and was in operation from 1974 to 1981. P&M used this site to dispose of their industrial waste. DOE, P&M and others agreed to pay the costs of cleaning up the site and a trust fund was established to receive and disburse payments. Total site cleanup (Phase I/Surface and Phase II/Subsurface) was estimated to be a minimum of $40 million. Currently, cleanup is in Phase II and monitoring will not be complete until the year 2020. In May 1988, the Laramie Project Office received a Notice of Violation from the Wyoming Department of Environmental Quality. As a result of this Notice, the Department of Energy has agreed to assist in the cleanup of the Rock Springs site. As a result of the DOE environmental survey that was conducted in February, 1989; it was found that two FE POUs at the Rockwell International Site required cleanup of hazardous materials.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
RCRA Remedial Actions	$0	$0	$0	0
CERCLA Remedial Actions	0	1,029	712	-31
Total, Fossil Energy Environmental Restoration .	$0	$1,029	$712	-31

II. B. Major Laboratory and Facility Funding

None

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
CERCLA Remedial Actions	Continue cleanup of the Ft. Lewis pilot plant site using prior year funds. ($0) Provide $380 in prior year funds for a site survey to determine the magnitude of the cleanup of the Rock Springs, Wyoming, oil shale retorting site. Utilize $292 of prior year funds to initiate cleanup activities. ($0)	Fund DOE share of Ft. Lewis trust fund Phase II cleanup of Western Superfund site. ($1,029) (Pittsburg and Midway) Continue cleanup of the Rock Springs site including groundwater sampling and analyses, pumping and water treatment, well abandonment and reseeding using prior year funds. ($0)	Continue to fund DOE share of Ft. Lewis trust fund Phase II cleanup of Western Superfund site. ($180) TBD Continue cleanup of the Rock Springs site using prior year funds. ($0)

III. Activity Description: Fossil Energy Environmental Restoration (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
CERCLA Remedial Actions (cont'd)	No activity. (90)	No activity. (90)	Fund cleanup of hazardous materials at the Rockwell International site. (9532) (Rockwell Int'l Corp.)
	0	1,029	712

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Fuels Programs

FY 1990 Appropriation	$2,735
Fuels Programs	
o Decrease in number of conversion orders processed. Continue processing certifications of coal capability and exemption requests. Provide two reports to Congress	-133
o Increase in number of import/export applications processed, decrease in EIS support	-125
o Increase in number of electricity export applications processed	+163
o Provide for management and administrative support	+29
FY 1991 Congressional Budget Request	$2,669

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

KEY ACTIVITY SUMMARY

FUELS PROGRAMS

I. Preface: Fuels Programs

The Office of Fuels Programs (OFP), consistent with the public interest, Administration policy, and the U.S./Canada Free Trade Agreement, manages the regulatory review of natural gas imports and exports, exports of electricity, and the construction and operation of electric power transmission facilities at international borders; and exercises regulatory oversight of the conversion of existing oil and gas-fired powerplants, processes exemptions from the statutory provisions of the Powerplant and Industrial Fuel Use Act of 1978 (FUA), as amended, and processes certifications of alternate fuel capability pursuant to the provisions of the amended FUA. OFP is an integral part of the Department's efforts to achieve a less regulated energy marketplace. The goals of OFP are consistent with the Administration's efforts to deregulate energy markets and reduce international trade barriers, and to create an integrated North American energy market. OFP encourages greater exchange of technical and regulatory information among our trading partners. The Office promotes wider use of domestic natural gas, clean coal technology, reduced acid rain, a cleaner environment, and reduced reliance on unreliable foreign sources of energy. Through its publications, OFP increases public awareness of energy issues and the advantages of competition in the marketplace.

II. A. Summary Table:

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Fuels Programs	$2,704	$2,735	$2,669	-2

II. B. Major Laboratory and Facility Funding

None

III. Activity Description:

Program Activity	FY 1989	FY 1990	FY 1991
Fuels Programs	Modified or rescinded 7 conversion orders. Processed 140 certifications of coal capability and 5 exemption requests. Provided two annual reports to Congress. (2 FTEs) ($356)	Modify or rescind 7 conversion orders. Process 50 certifications of coal capability and 5 exemption requests. Provide two annual reports to Congress. (1 FTEs) ($357)	Modify or rescind 3 conversion orders. Process 50 certifications of coal capability and 5 exemption requests. Provide two annual reports to Congress. (1 FTEs) ($224)
	Processed 85 import/export applications. Provided support for consultations with U.S. trading partners. Participated in FERC proceedings. Contract support for EISs ($150). (15 FTEs) ($1,662)	Process 85 import/export applications. Provide support for consultation with U.S. trading partners. Participate in FERC proceedings. Contract support for EISs ($495). (19 FTEs) ($1,979)	Process 100 import/export applications. Provide support for consultations with U.S. trading partners. Contract support for EISs ($38). Delay NEPA compliance activities to FY 1992. Monitor regulatory compliance and industry performance. Participate in FERC proceedings. Provide natural gas policy support for ASFE. (21 FTEs) ($1,854)

III. Activity Description: Fuels Programs (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Fuels Programs (cont'd)	Processed 2 electricity export applications and 4 construction permits. Contract support for EISs and reliability assessments ($300). (1 FTE) ($603)	Process 2 electricity export applications and 6 construction permits. Contract support for EISs no longer required. (5 FTEs) ($297)	Process 3 electricity export applications and 5 construction permits. Monitor and analyze international electricity trade. (7 FTEs) ($460)
	Management and administrative support provided by ERA. ($83)	Management and administrative support provided by ERA. ($102)	Provide management and administrative support. ($131)
	2,704	2,735	2,669

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(213/214/5280100)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	709	31,021	717	34,881	848	31,254
11.3	Other than full-time permanent..........................		743		0		0
11.5	Other personnel compensation......................		626		0		0
11.8	Special personal services payments........................		6		0		0
11.9	Total personnel compensation......................	709	32,396	717	34,881	848	31,254
12.1	Personnel benefits-civilian.............		5,529		5,908		5,277
13.0	Benefits for former personnel...........		9		0		0
21.0	Travel and transport of persons.........		1,760		1,830		1,608
22.0	Transportation of things................		88		89		98
23.2	Comm., util., and other rent............		1,628		1,707		1,748
24.0	Printing and reproduction...............		73		75		50
25.0	Other services..........................		299,784		374,130		158,288
26.0	Supplies and materials..................		2,803		2,915		1,508
31.0	Equipment...............................		2,225		3,108		2,385
32.0	Lands and structures....................		21,097		12,110		0
41.0	Grants, subsidies, and contributions..........................		10,548		8,416		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	709	377,940	717	445,169	848	202,309

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(214)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		0		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		0		0		0
26.0	Supplies and materials		0		0		0
31.0	Equipment		(1)		0		0
32.0	Lands and structures		1		245		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	0	0	245	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(213)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	709	31,021	717	34,881	640	31,254
11.3	Other than full-time permanent..........................		743		0		0
11.5	Other personnel compensation........................		628		0		0
11.8	Special personal services payments........................		6		0		0
11.9	Total personnel compensation........................	709	32,398	717	34,881	640	31,254
12.1	Personnel benefits-civilian.............		5,529		5,906		5,277
13.0	Benefits for former personnel...........		9		0		0
21.0	Travel and transport of persons.........		1,709		1,839		1,888
22.0	Transportation of things................		85		88		83
23.2	Comm., util., and other rent............		1,828		1,707		1,748
24.0	Printing and reproduction...............		73		75		58
25.0	Other services..........................		299,857		374,139		158,288
26.0	Supplies and materials..................		2,803		2,915		1,508
31.0	Equipment...............................		2,226		3,108		2,386
32.0	Lands and structures....................		21,008		11,885		0
41.0	Grants, subsidies, and contributions........................		10,548		8,418		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	709	378,019	717	444,940	640	202,308

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Coal)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	191	6,388	208	6,394	178	6,916
11.3	Other than full-time permanent..........................		70		0		0
11.5	Other personnel compensation......................		168		0		0
11.8	Special personal services payments........................		0		0		0
11.9	Total personnel compensation......................	191	6,626	208	6,394	178	6,916
12.1	Personnel benefits-civilian.............		1,241		1,243		1,361
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		175		121		90
22.0	Transportation of things................		3		4		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		18		17		0
25.0	Other services..........................		224,672		275,086		101,961
26.0	Supplies and materials..................		1,303		1,353		0
31.0	Equipment...............................		1,040		1,040		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		8,284		6,520		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	191	243,362	208	291,778	178	110,328

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Control Technology and Coal Preparation)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	71	2,318	65	1,823	54	2,086
11.3	Other than full-time permanent		34		0		0
11.5	Other personnel compensation		97		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	71	2,449	65	1,823	54	2,086
12.1	Personnel benefits-civilian		438		382		409
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		61		30		22
22.0	Transportation of things		2		2		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		1		1		0
25.0	Other services		44,489		58,408		31,003
26.0	Supplies and materials		444		461		0
31.0	Equipment		137		137		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		2,339		1,090		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		71	50,351	65	63,214	54	33,529

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Advanced Research & Technology Development)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	38	657	50	1,520	44	1,707
11.3	Other than full-time permanent		24		0		0
11.5	Other personnel compensation		8		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	38	689	50	1,520	44	1,707
12.1	Personnel benefits-civilian		146		296		333
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		11		9		7
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		5		4		0
25.0	Other services		20,783		20,684		24,441
26.0	Supplies and materials		100		106		0
31.0	Equipment		110		110		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		5,890		4,586		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		38	27,734	50	27,324	44	26,488

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Coal Liquefaction)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	28	1,381	32	860	26	1,010
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation......................		25		0		0
11.8	Special personal services payments........................		0		0		0
11.9	Total personnel compensation......................	28	1,406	32	860	26	1,010
12.1	Personnel benefits-civilian.............		239		154		197
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		36		26		19
22.0	Transportation of things................		0		1		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		27,864		36,153		9,597
26.0	Supplies and materials..................		405		420		0
31.0	Equipment...............................		115		115		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions..........................		12		9		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	28	30,100	32	37,737	26	10,823

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Combustion Systems)

Direct Funding:		1989 ACTUALS FTE	1989 ACTUALS AMOUNT	1990 ESTIMATE FTE	1990 ESTIMATE AMOUNT	1991 ESTIMATE FTE	1991 ESTIMATE AMOUNT
11.0	Personnel compensation:						
11.1	Full-time permanent.................	29	902	32	902	29	1,128
11.3	Other than full-time permanent...........................		11		0		0
11.5	Other personnel compensation........................		26		0		0
11.8	Special personal services payments.........................		0		0		0
11.9	Total personnel compensation......................	29	900	32	902	29	1,120
12.1	Personnel benefits-civilian.............		181		180		220
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		34		29		22
22.0	Transportation of things................		1		1		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		24,183		33,228		16,255
26.0	Supplies and materials..................		242		251		0
31.0	Equipment...............................		208		208		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.....................		43		36		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	29	25,001	32	34,832	29	17,823

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Fuel Cells)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	1	22*	1	38	1	47
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation..........................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation..........................	1	22	1	38	1	47
12.1	Personnel benefits-civilian............		5		11		11
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things..............		0		0		0
23.2	Comm., util., and other rent...........		0		0		0
24.0	Printing and reproduction..............		12		12		0
25.0	Other services........................		26,886		30,243		7,024
26.0	Supplies and materials................		0		0		0
31.0	Equipment.............................		0		0		0
32.0	Lands and structures..................		0		0		0
41.0	Grants, subsidies, and contributions.........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends.................		0		0		0
Totals	....	1	26,925	1	30,304	1	7,082

* This is not a full man year. Average salary was determined by annualizing man hours.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Heat Engines)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	7	410	12	455	11	427
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation.......................		1		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation......................	7	411	12	455	11	427
12.1	Personnel benefits-civilian............		98		100		83
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		12		11		8
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		20,987		21,140		5,525
26.0	Supplies and materials..................		31		32		0
31.0	Equipment...............................		447		447		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions..................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	7	21,986	12	22,185	11	6,043

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Underground Coal Gasification)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	0	2	0	0	0	0
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation......................		0		0		0
11.8	Special personal services payments........................		0		0		0
11.9	Total personnel compensation......................	0	2	0	0	0	0
12.1	Personnel benefits-civilian............		0		0		0
13.0	Benefits for former personnel............		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		1,331		882		485
26.0	Supplies and materials..................		0		0		0
31.0	Equipment...............................		0		0		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions....................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	0	1,333	0	882	0	485

DEPARTMENT OF ENERGY
FY 1981 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

- (Magnetohydrodynamics)

		1979 ACTUALS		1980 ESTIMATE		1981 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		3		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		37,630		40,882		0
26.0	Supplies and materials		0		0		0
31.0	Equipment		0		0		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		0		0 0		0 0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	37,633	0	40,882	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Surface Coal Gasification)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	19	636	16	607	13	504
11.3	Other than full-time permanent..........................		1		0		0
11.5	Other personnel compensation..........................		11		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation..........................	19	648	16	607	13	504
12.1	Personnel benefits-civilian............		133		130		98
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		29		16		12
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		20,429		25,640		7,871
26.0	Supplies and materials..................		81		84		0
31.0	Equipment...............................		23		23		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	19	21,343	16	26,500	13	8,485

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Unconventional Gas Recovery)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	12	455	13	493	15	582
11.3	Other than full-time permanent...........................		0		0		0
11.5	Other personnel compensation.........................		0		0		0
11.8	Special personnel services payments..........................		0		0		0
11.9	Total personnel compensation.........................	12	455	13	493	15	582
12.1	Personnel benefits-civilian.............		115		103		113
13.0	Benefits for former personnel..........		0		0		0
21.0	Travel and transport of persons.........		9		6		5
22.0	Transportation of things...............		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services.........................		8,207		17,150		12,974
26.0	Supplies and materials..................		40		41		0
31.0	Equipment..............................		92		92		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	12	8,918	13	17,885	15	13,674

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Petroleum)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent.................	16	613	11	417	0	0
11.3	Other than full-time permanent.........................		0		0		0
11.5	Other personnel compensation.....................		0		0		0
11.8	Special personal services payments.........................		0		0		0
11.9	Total personnel compensation.....................	16	613	11	417	0	0
12.1	Personnel benefits-civilian............		143		89		0
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		9		6		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		1		1		0
25.0	Other services..........................		35,133		41,902		40,897
26.0	Supplies and materials..................		59		81		0
31.0	Equipment...............................		125		125		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		1,966		1,508		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	16	38,049	11	44,258	0	40,897

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Advanced Extraction & Process Technology)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	0	0	0	0	0	0
11.3	Other than full-time permanent...........................		0		0		0
11.5	Other personnel compensation.......................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation.......................	0	0	0	0	0	0
12.1	Personnel benefits-civilian............		1		0		0
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		4,287		4,044		12,830
26.0	Supplies and materials..................		10		10		0
31.0	Equipment...............................		0		0		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	0	4,298	0	4,054	0	12,830

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Enhanced Oil Recovery)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	8	331	9	341	0	0
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation......................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation......................	8	331	9	341	0	0
12.1	Personnel benefits-civilian............		78		73		0
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		9		6		0
22.0	Transportation of things...............		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction..............		1		1		0
25.0	Other services..........................		20,841		28,610		27,106
26.0	Supplies and materials..................		1		1		0
31.0	Equipment...............................		75		75		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions..........................		1,977		1,598		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	8	23,313	9	30,705	0	27,106

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Oil Shale)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	6	282	2	78	0	0
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation..........................		0		0		0
11.8	Special personnel services payments..........................		0		0		0
11.9	Total personnel compensation..........................	6	282	2	78	0	0
12.1	Personnel benefits-civilian............		64		16		0
13.0	Benefits for former personnel..........		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction..............		0		0		0
25.0	Other services..........................		10,005		9,306		882
26.0	Supplies and materials..................		48		50		0
31.0	Equipment...............................		50		50		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions..........................		(11)		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	6	10,438	2	9,500	0	882

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Program Direction and Management Support)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent.................	490	23,565	480	25,548	427	21,756
11.3	Other than full-time permanent..........................		673		0		0
11.5	Other personnel compensation.......................		458		0		0
11.8	Special personal services payments........................		6		0		0
11.9	Total personnel compensation.......................	490	24,702	480	25,548	427	21,756
12.1	Personnel benefits-civilian............		4,030		4,189		3,535
13.0	Benefits for former personnel..........		9		0		0
21.0	Travel and transport of persons.........		1,576		1,067		1,548
22.0	Transportation of things...............		82		84		92
23.2	Comm., util., and other rent............		1,028		1,090		1,748
24.0	Printing and reproduction..............		54		58		58
25.0	Other services.........................		31,845		34,021		1,581
26.0	Supplies and materials.................		1,401		1,458		1,508
31.0	Equipment..............................		57		137		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		298		298		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	490	65,082	480	69,146	427	31,824

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Headquarters Program Direction)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	130	7,898	110	8,048	123	7,070
11.3	Other than full-time permanent...........................		330		0		0
11.5	Other personnel compensation........................		123		0		0
11.8	Special personal services payments...........................		0		0		0
11.9	Total personnel compensation........................	130	8,351	110	8,048	123	7,070
12.1	Personnel benefits-civilian............		1,152		1,111		1,058
13.0	Benefits for former personnel...........		1		0		0
21.0	Travel and transport of persons.........		803		691		464
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		4		4		4
25.0	Other services..........................		3,771		6,444		700
26.0	Supplies and materials..................		(5)		0		0
31.0	Equipment...............................		0		0		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions........................		298		298		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	130	14,175	110	16,507	123	9,058

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Federal Inspector for the Alaskan Pipeline)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	3	112	2	101	3	207
11.3	Other than full-time permanent		49		0		0
11.5	Other personnel compensation		2		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	3	163	2	101	3	207
12.1	Personnel benefits-civilian		24		28		30
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		6		10		10
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		6		163		20
26.0	Supplies and materials		1		1		0
31.0	Equipment		0		0		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		3	200	2	303	3	267

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(ETC Program Direction)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	348	15,554	348	17,306	301	13,879
11.3	Other than full-time permanent..........................		285		0		0
11.5	Other personnel compensation......................		333		0		0
11.8	Special personal services payments.........................		8		0		0
11.9	Total personnel compensation......................	348	16,180	348	17,306	301	13,879
12.1	Personnel benefits-civilian............		2,864		3,050		2,446
13.0	Benefits for former personnel..........		8		0		0
21.0	Travel and transport of persons........		967		986		1,082
22.0	Transportation of things...............		82		84		92
23.2	Comm., util., and other rent...........		1,626		1,800		1,748
24.0	Printing and reproduction..............		50		52		54
25.0	Other services.........................		28,068		27,414		792
26.0	Supplies and materials.................		1,405		1,457		1,508
31.0	Equipment..............................		57		137		0
32.0	Lands and structures...................		0		0		0
41.0	Grants, subsidies, and contributions......................		0		0		0
42.0	Insurance claims and indemnities.......		0		0		0
43.0	Interest and dividends.................		0		0		0
Totals	....	348	51,307	348	52,156	301	21,601

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Plant and Capital Equipment)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent.................	0	0	0	0	0	0
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation......................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation......................	0	0	0	0	0	0
12.1	Personnel benefits-civilian............		0		0		0
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things..............		0		0		0
23.2	Comm., util., and other rent...........		0		0		0
24.0	Printing and reproduction..............		0		0		0
25.0	Other services.......................		0		0		0
26.0	Supplies and materials.................		0		0		0
31.0	Equipment..........................		912		1,714		2,305
32.0	Lands and structures.................		21,096		11,865		0
41.0	Grants, subsidies, and contributions.......................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends.................		0		0		0
Totals	....	0	22,008	0	13,579	0	2,305

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Capital Equipment)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	0	0	0	0	0	0
11.3	Other than full-time permanent...........................		0		0		0
11.5	Other personnel compensation........................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation........................	0	0	0	0	0	0
12.1	Personnel benefits-civilian.............		0		0		0
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		0		0		0
26.0	Supplies and materials..................		0		0		0
31.0	Equipment...............................		912		1,714		2,306
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	0	912	0	1,714	0	2,306

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Construction -- 213)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		0		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		0		0		0
26.0	Supplies and materials		0		0		0
31.0	Equipment		0		0		0
32.0	Lands and structures		21,006		11,865		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	21,006	0	11,865	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Construction -- 214)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		0		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		0		0		0
26.0	Supplies and materials		0		0		0
31.0	Equipment		(1)		0		0
32.0	Lands and structures		1		245		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	0	0	245	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Environmental Restoration)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		0		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		0		1,029		712
26.0	Supplies and materials		0		0		0
31.0	Equipment		0		0		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	0	0	1,029	0	712

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Fuels Programs)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent..................	0	0	25	2,031	29	2,000
11.3	Other than full-time permanent..........................		0		0		0
11.5	Other personnel compensation......................		0		0		0
11.8	Special personal services payments........................		0		0		0
11.9	Total personnel compensation......................	0	0	25	2,031	29	2,000
12.1	Personnel benefits-civilian.............		0		282		278
13.0	Benefits for former personnel...........		0		0		0
21.0	Travel and transport of persons.........		0		30		47
22.0	Transportation of things................		0		1		1
23.2	Comm., util., and other rent............		0		17		0
24.0	Printing and reproduction...............		0		1		0
25.0	Other services..........................		0		200		343
26.0	Supplies and materials..................		0		2		0
31.0	Equipment...............................		0		0		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions.........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	0	0	25	2,633	29	2,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

Federal Inspector for the Alaska Natural Gas Pipeline
(S200100)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
Direct Funding:		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
11.0	Personnel compensation:						
11.1	Full-time permanent	0	0	0	0	0	0
11.3	Other than full-time permanent		0		0		0
11.5	Other personnel compensation		0		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	0	0	0	0	0	0
12.1	Personnel benefits-civilian		0		0		0
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		0		0		0
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		0		0		0
24.0	Printing and reproduction		0		0		0
25.0	Other services		(73)		0		0
26.0	Supplies and materials		0		0		0
31.0	Equipment		0		0		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		0	(73)	0	0	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Cooperative R&D Ventures)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent.................	0	0	0	0	0	0
11.3	Other than full-time permanent...........................		0		0		0
11.5	Other personnel compensation......................		0		0		0
11.8	Special personal services payments..........................		0		0		0
11.9	Total personnel compensation......................	0	0	0	0	0	0
12.1	Personnel benefits-civilian.............		0		0		0
13.0	Benefits for former personnel............		0		0		0
21.0	Travel and transport of persons.........		0		0		0
22.0	Transportation of things................		0		0		0
23.2	Comm., util., and other rent............		0		0		0
24.0	Printing and reproduction...............		0		0		0
25.0	Other services..........................		0		4,631		0
26.0	Supplies and materials..................		0		0		0
31.0	Equipment...............................		0		0		0
32.0	Lands and structures....................		0		0		0
41.0	Grants, subsidies, and contributions..........................		0		0		0
42.0	Insurance claims and indemnities........		0		0		0
43.0	Interest and dividends..................		0		0		0
Totals	....	0	0	0	4,631	0	0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	67	65	54
AR&TD	34	50	44
Coal Liquefaction	27	32	26
Combustion Systems	28	32	29
Fuel Cells	1	1	1
Heat Engines	7	12	11
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	18	16	13
Advanced Extraction & Process Technology	...	...	...
Enhanced Oil Recovery	7	9	...
Oil Shale	8	2	...
Unconventional Gas Recovery	11	13	15
Program Direction	511	458	424
Alaska Natural Gas Tranportation [1/]	2	2	3
Fuels Program	18	25	29
Total:	739	717	649
Attrition Rate:	FY 1987 7.0%	FY 1988 5.9%	FY 1989 7.8%

[1/] FTE's not counted against Congressionally mandated floors.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
FOSSIL ENERGY RESEARCH AND DEVELOPMENT HEADQUARTERS

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	...	...	...
AR&TD	...	...	...
Coal Liquefaction	...	...	...
Combustion Systems	...	...	...
Fuel Cells	...	...	...
Heat Engines	...	...	...
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	...	...	...
Advanced Extraction & Process Technology	...	...	...
Enhanced Oil Recovery	...	...	...
Oil Shale	...	...	...
Unconventional Gas Recovery	...	...	...
Program Direction	152	110	123
Alaska Natural Gas Transportation System [1/]	2	2	3
Fuels Program	18	25	29
Total:	172	137	155
Attrition Rate:	FY 1987 5.6%	FY 1988 8.2%	FY 1989 9.7%

1/ FTE's not counted against Congressionally mandated floors.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
METAIRIE SITE OFFICE

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	...	...	...
AR&TD	...	...	...
Coal Liquefaction	...	...	...
Combustion Systems	...	...	...
Fuel Cells	...	...	...
Heat Engines	...	...	...
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	...	...	...
Advanced Extraction and Process Technology	...	...	...
Enhanced Oil Recovery	...	...	...
Oil Shale	...	...	...
Unconventional Gas Recovery	...	...	...
Program Direction	3	6	5
Total:	3	6	5
Attrition Rate:	FY 1987 0%	FY 1988 0%	FY 1989 0%

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
FOSSIL ENERGY
BARTLESVILLE PROJECT OFFICE

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	...	...	...
AR&TD	...	...	...
Coal Liquefaction	...	...	...
Combustion Systems	...	...	...
Fuel Cells	...	...	...
Heat Engines	...	...	...
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	...	...	...
Advanced Extraction & Process Technology	...	...	...
Enhanced Oil Recovery	...	...	...
Oil Shale	...	...	...
Unconventional Gas Recovery	...	...	...
Program Direction	14	15	17
Total:	14	15	17
Attrition Rate:	FY 1987 3.2%	FY 1988 2.3%	FY 1989 7.0%

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
FOSSIL ENERGY
MORGANTOWN ENERGY TECHNOLOGY CENTER

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	18	16	13
AR&TD .	9	16	16
Coal Liquefaction	...	...	...
Combustion Systems	13	12	12
Fuel Cells	1	1	1
Heat Engines	7	12	11
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	18	16	13
Advanced Extraction and Process Technology	...	...	...
Enhanced Oil Recovery	7	9	...
Oil Shale	8	2	...
Unconventional Gas Recovery	11	13	15
Program Direction	175	172	152
Total:	267	269	233
Attrition Rate:	FY 1987 12.1%	FY 1988 9.5%	FY 1989 8.0%

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT

STAFFING SUMMARY
Distribution of FTE's
FOSSIL ENERGY
PITTSBURGH ENERGY TECHNOLOGY CENTER

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	49	49	41
AR&TD	25	34	28
Coal Liquefaction	27	32	26
Combustion Systems	15	20	17
Fuel Cells	...	...	...
Heat Engines	...	...	...
Underground Coal Gasification	...	...	...
Magnetohydrodynamics	...	...	...
Surface Coal Gasification	...	...	...
Advanced Extraction & Process Technology	...	...	...
Enhanced Oil Recovery	...	...	...
Oil Shale	...	...	...
Unconventional Gas Recovery	...	...	...
Program Direction	167	155	127
Total:	283	290	239
Attrition Rate:	FY 1987 7.1%	FY 1988 3.5%	FY 1989 6.3%

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

MATERIALS RELATED ACTIVITIES

Fossil Energy

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Control Technology & Coal Preparation	$ 3,200	$ 3,800	$ 2,200
Advanced Research and Technology Development	7,300	7,300	7,000
Coal Liquefaction	60	70	20
Combustion Systems	1,000	1,300	680
Fuel Cells	5,200	7,400	1,400
Heat Engines	6,700	6,200	1,800
Magnetohydrodynamics	4,200	4,600	0
Surface Coal Gasification	90	90	30
TOTAL COAL	$27,750	$30,760	$13,130

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST

Summary of Activities - Morgantown Energy Technology Center
(dollars in thousands)

PROGRAM	FY 1989 1/ Actual B/A	FY 1989 1/ Actual FTE	FY 1990 1/ Estimate B/A	FY 1990 1/ Estimate FTE	FY 1991 Request B/A	FY 1991 Request FTE
Control Technology and Coal Preparation	$ 14,112	18	$ 19,505	16	$ 11,618	13
Advanced Research and Technology Development	2,583	9	3,721	16	3,017	16
Coal Liquefaction	663	0	99	0	0	0
Combustion Systems	12,849	13	16,363	12	9,684	12
Fuel Cells	24,967	1	36,488	1	6,513	1
Heat Engines	22,360	7	20,733	12	5,983	11
Underground Coal Gasification	1,211	0	807	0	461	0
Surface Coal Gasification	19,145	18	22,206	16	8,001	13
Advanced Extraction and Process Technology	636	0	1,034	0	1,345	0
Enhanced Oil Recovery	4,370	7	2,635	9	0	0
Oil Shale	6,770	8	5,667	2	656	0
Unconventional Gas Recovery	10,605	11	13,497	13	13,079	15
Program Direction	25,441	175	25,499	152	10,629	152
Capital Equipment	233	0	230	0	232	0
Construction	5,337		4,787	0	207	0
Cooperative R&D	0	0	4,631	0	0	0
Total Fossil Energy R&D	151,282	267	177,902	249	71,425	233
Clean Coal Technology	21,463	16	21,431	17	4,414	17
Total Morgantown Energy Technology Center	$172,745	283	$199,333	266	$ 75,839	250

1/ The funding in this exhibit covers current R&D operations at the Center, including costs associated with the operation of a project office at Laramie, Wyoming; efforts under the cooperative agreements with the University of North Dakota Energy and Environmental Research Center and the University of Wyoming Research Institute; and contract work managed by the Center and project office. The funding does not include pass through funds provided by the Center to National Laboratories and Operations Offices, nor prior year unobligated carryover.

Summary of Activities - Morgantown Energy Technology Center (cont'd)

NARRATIVE:

The Morgantown Energy Technology Center (METC) performs the day-to-day project management and in-house R&D functions for assigned technology areas which include Gas Stream Cleanup, Waste Management, Fluidized-Bed Combustion, Fuel Cells, Heat Engines, Surface Coal Gasification, Underground Coal Gasification, Unconventional Gas Recovery, Oil Shale, Tar Sands, Fundamental Geoscience and Extraction Research, Instrumentation and Diagnostics, and Components.

In Control Technology and Coal Preparation, METC's activities include the development of technologies for high temperature Gas Stream Cleanup and Waste Management. The primary objective of the Gas Stream Cleanup subprogram is to develop the required technology to meet environmental standards on product gases from gasifiers and combustors for application to advanced power conversion systems such as fuel cells and gas turbines and other conversion devices where significant environmental and process improvement can result. The Waste Management program objective is to ensure, through waste characterization and field monitoring studies, that coal-use by-products can be disposed of or utilized in an environmentally safe manner. The purpose of program activities in Combustion Systems is to increase the utilization of coal in an environmentally acceptable manner by developing advanced Atmospheric Fluidized Bed (AFB) concepts and advanced technologies for Pressurized Fluidized Bed (PFB) processes. METC manages the contracted development of fuel cell technologies for high efficiency, low emissions power plant applications. In the Heat Engines Program, METC conducts and manages contracted research and development directed toward the solution of major design, durability and performance problems associated with direct-fired coal based fuels in gas turbines and diesel engines. In the Surface Coal Gasification Program, METC manages in-house and contracted research and development involving advances in coal gasification through new concepts development (including mild gasification processes) and refinement of existing systems. METC's mission in gas recovery involves the development of technologies for the recovery of gas from unconventional sources such as eastern Devonian gas shales, western gas sands, gas hydrates, deep source gas, as well as efforts directed at maximizing additional recovery from conventional gas reservoirs. In the Oil Shale Program, METC conducts in-house research on the chemistry and kinetics of developing systems analysis models; and manages contract research in the areas of process technology and waste characterization. In the Underground Coal Gasification Program, METC is evaluating the environmental impact of sustained Underground Coal Gasification operations at the Hanna and Hoe Creek sites in Wyoming. In the Enhanced Oil Recovery Program and the Tar Sands subprogram, METC conducts in-house research in miscible gas injection processes for more efficient oil recovery from depleted oil fields, develops numerical simulation models for these processes and manages research in the area of bitumen recovery from tar sand resources.

Summary of Activities - Morgantown Energy Technology Center (cont'd)

In addition to in-house R&D functions, METC personnel manage industrial and university contracts, and National Laboratory R&D activities. Typical activities include: contract management, technical evaluations, R&D in support of programmatic activities, development of project and procurement plans, dissemination of technical data, and other activities related to program and site support. In FY 1991, the primary focus of METC activities will be the management of contractual R&D and transfer of technology for assigned program areas.

METC also conducts activities in support of the overall goal of the Clean Coal Technology Program to conduct cost-shared demonstrations of clean coal technologies capable of commercialization in the 1990's. When completed, it is expected that these demonstration projects will provide sufficient technical, economic, environmental, safety and health, and operational information at a large enough scale to enable the private sector to make rational commercialization decisions to deploy the technologies. Funds for the ongoing Clean Coal Technology Program were made available through Public Law 99-190 and 100-202 in 1986 and 1988, respectively. Thirteen projects were selected for negotiation through the first Program Opportunity Notice in 1986 (Clean Coal I) and are still active. Of these projects, six were assigned to METC for negotiation. The projects are presently in various stages of negotiation, design, construction, and operation. In 1988, 16 projects were selected and three have been assigned to METC for negotiation under the Innovative Clean Coal Technology Program. In FY 1989 P.L. 100-446 amended the advanced appropriations under the previous public laws and provided for a third solicitation. Thirteen projects were selected for negotiation; four have been assigned to METC for negotiation.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST

Summary of Activities - Pittsburgh Energy Technology Center
(dollars in thousands)

PROGRAM	FY 1989 1/ Actual B/A	FY 1989 1/ Actual FTE	FY 1990 1/ Estimate B/A	FY 1990 1/ Estimate FTE	FY 1991 Request B/A	FY 1991 Request FTE
Control Technology and Coal Preparation	$ 30,514	49	$ 34,557	49	$ 20,325	41
Advanced Research and Technology Development	7,183	25	6,947	34	6,253	28
Coal Liquefaction	27,518	27	29,774	32	8,976	26
Combustion Systems	12,206	15	15,817	20	7,651	17
Magnetohydrodynamics	15,557	0	16,976	0	0	0
Program Direction	24,148	167	24,433	127	9,853	127
Capital Equipment	232	0	1,216	0	1,006	0
Construction	3,338	0	5,671	0	895	0
Total Fossil Energy R&D	120,696	283	135,391	262	54,959	239
Clean Coal Technology	70,419	16	55,451	20	56,114	20
Total Pittsburgh Energy Technology Center	$191,115	299	$190,842	282	$111,073	259

1/ The funding in this exhibit covers current R&D operations at the Center and contracted work managed by the Center. The funding does not include pass through funds provided by the Center to National Laboratories and Operations Offices, nor prior year unobligated carryover.

NARRATIVE:

The Pittsburgh Energy Technology Center (PETC) performs the day-to-day project management and in-house R&D functions in the technology areas of Coal Utilization Science, Solids Transport Research, University Coal Research, Coal Liquefaction, Coal Preparation, Flue Gas Cleanup, Alternative Fuels Utilization, Advanced Combustion Technology, and Magnetohydrodynamics (MHD). This includes numerous research and development activities associated with the development, in an environmentally acceptable manner, of industrial uses of coal and coal derived synthetic fuels.

Summary of Activities - Pittsburgh Energy Technology Center (cont'd)

Within the Advanced Research and Technology Development Program, Coal Utilization Science focuses on the establishment of the technology base for developing advanced fossil fuel combustion systems to accelerate the direct utilization of coal by industry and in the utility sector of commercial power generation. The technology areas specifically include coal cleaning, emission control, combustion chemistry, radiant heat transfer, mineral transformation, ash transport, and deposition and surface science pertaining to coal beneficiation and other separation processes. University Coal Research is aimed at basic and applied research to improve scientific and technical understanding of the fundamental processes involved in the conversion and utilization of coal, to furnish technical support for ongoing and developing coal conversion processes, and to develop new approaches for the design of future coal conversion and utilization technologies utilizing the unique capabilities of our Nation's collegiate community. The objectives of solids transport research are to develop models that characterize bulk and multiphase flow of solids, and to validate and further develop solids flow models for use in process and component design and operation.

The goal of the Coal Liquefaction Program is to establish a knowledge base that will facilitate the private sector's development of coal conversion processes for economical production of environmentally acceptable synthetic liquid fuels through R&D in high-risk, long-term concepts that have potential for high payoff. The overall strategy is to support a number of liquefaction concepts in parallel at the laboratory scale. Specific areas of concentration include: 1) the development of new and improved indirect liquefaction technology; 2) the development of more advanced and innovative direct coal liquefaction processes for further private sector development and demonstration; and 3) the generation of supporting data in the areas of environment and health impacts, engineering evaluations, economic assessments and data base management. Advanced Research activities focus on establishing a knowledge base for the conversion of coal into useful liquid products. The specific technology areas include novel coal liquefaction processes, bioliquefaction/biosolubilization of coal, and novel catalytic approaches in coal liquefaction.

Within the Control Technology and Coal Preparation Program, Coal Preparation focuses on the development of advanced coal cleaning technologies to enhance greater utilization of coal in an environmentally acceptable manner. The principal thrust is directed toward the development of processes to enable the substitution for oil and natural gas of a coal-based fuel in an economical and environmentally acceptable way and the development of processes to enable utility and industrial boilers to meet new source performance standards at a lower cost than if wet scrubbers were employed. The existing program encompasses laboratory and bench scale research to physically liberate and separate finely disseminated pyrite and mineral impurities in selected, economically important, U.S. coals. Flue Gas Cleanup focuses on the development of a technology base for simple, cost effective and environmentally superior processes that remove pollutants from coal combustion gas streams in both utility and industrial boilers in light of existing, as well as anticipated, more stringent environmental standards. Developmental efforts are conducted on processes used to separate constituents such as sulfur and nitrogen oxides in coal fuel streams before, during and after combustion. Within the Combustion Systems Program, Advanced Combustion Technology centers on developing alternative combustion technologies that can use coal and coal-based fuels to displace oil and gas. Advanced technologies are being developed for application in the industrial/utility, commercial, and residential markets. Alternative Fuels Utilization is directed towards establishing a technology data base for producing clean alternative coal-based liquid, solid (including dry ultrafine coals) and slurry coal-based fuels to substitute for oil and gas based systems. Advanced Research focuses on combustion mechanisms pertinent to coal-based fuel utilization technologies.

PETC's personnel perform in-house R&D functions and manage industrial and university contracts and National Laboratory R&D efforts. Typical activities include contract and National Laboratory monitoring, performance of technical evaluations, development of project and procurement plans, dissemination of technical data, and other activities related to program and site support. In FY 1991, the primary focus of PETC activities will be the contract research and maintenance of the technology data base for assigned program areas. Contract monitoring activities related to University and National Laboratory research will also continue, as well as the Cooperative Agreement with the National Institute for Petroleum and Energy Research.

PETC also conducts activities in support of the overall goal of the Clean Coal Technology Program to conduct cost-shared demonstrations of clean coal technologies capable of commercialization in the 1990's. When completed, it is expected that these demonstration projects will provide sufficient technical, economic, environmental, health and safety, and operational information at a large enough scale to enable the private sector to make rational commercialization decisions to deploy the technologies. Funds for the ongoing Clean Coal Technology Program were made available through Public Laws 99-190 and 100-202 in 1986 and 1988, respectively. Thirteen projects were selected for negotiation through the first Program Opportunity Notice in 1986 (Clean Coal-I) are still active. Of these projects, seven (7) were assigned to PETC for negotiation. The projects are presently ~~in~~ various stages of negotiation, design, construction, and operation. In 1988, 16 projects were selected under the Innovative Clean Coal Technology Solicitation (Clean Coal-II), and 13 have been assigned to PETC for negotiation. In FY 1988 P.L. 100-446 amended the advanced appropriations under the previous public laws and provided for a third solicitation. Thirteen projects were selected for negotiation; nine have been assigned to PETC for negotiation.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST

Summary of Activities - Bartlesville Project Office
(dollars in thousands)

PROGRAM	FY 1989 1/ Actual		FY 1990 1/ Estimate		FY 1991 Request	
	B/A	FTE	B/A	FTE	B/A	FTE
Advanced Research and Technology Development	$ 0	0	$ 0	0	$ 0	0
Coal Liquefaction	415	0	212	0	94	0
Unconventional Gas Recovery	0	0	0	0	0	0
Advanced Extraction and Process Technology	2,058	0	2,364	0	7,697	0
Enhanced Oil Recovery	14,059	0	21,446	0	25,144	0
Program Direction	1,529	14	1,736	17	769	17
Capital Equipment	35	0	34	0	35	0
Construction	75	0	99	0	20	0
Total Bartlesville Project Office	$18,171	14	$25,891	17	$33,759	17

1/ The funding in this exhibit covers operation of the project office and contracted work managed by the project office. Funding does not include pass through funds provided by the project office to National Laboratories and Operations Offices nor unobligated prior year carryover.

NARRATIVE:

The Bartlesville Project Office (BPO), with program guidance from Headquarters, has lead responsibility for the Enhanced Oil Recovery Program (EOR) subprograms Heavy Oil and Light Oil and the Advanced Extraction and Process Technology Program (AEPT) subprograms Supporting Technology and Environmental Research, Fundamental Geoscience and Extraction Research, and University Geoscience Research. Together they comprise a major portion of the Department's petroleum research effort. BPO has the prime responsibility for formulating and executing implementation plans for these efforts which are critical to the Nation's long-term energy position and include research in oil recovery technology, geoscience, and reservoir and resource characterization. In carrying out the research, BPO staff implements, monitors, coordinates and evaluates research in fundamental and applied concepts thru the Energy Technology Centers, National Laboratories, Universities, state agencies, consortia and a variety of private contractors. Included in the efforts are new initiatives to stimulate increased production from known U.S. resources. These efforts are focused on a new Federal Oil Research Strategy. Under that strategy, all of the foregoing research efforts will be working toward the identification and prioritization of critical reservoir classes relative to abandonment of marginal wells and the consequent loss of access to significant oil reserves. These oil reserves could be produced within the strategy's time frames by state-of-the-art (near-term) and advanced extraction/production technology (mid- and long-term) research. Included is increased emphasis on environmental issues concerned with drilling, production and refining operations, and on an aggressive technology transfer program.

The largest single contract effort is with the National Institute for Petroleum and Energy Research (NIPER). NIPER was created in FY 1984 with the defederalization of Bartlesville Energy Technology Center (BETC), which was the decentralized center from which BPO and NIPER evolved. Though DOE retains ownership of the facilities and equipment, NIPER is the effective property operator under a cooperative agreement between the DOE and the IIT Research Institute (IITRI). Monitoring and guiding NIPER in its research effort is a major activity of the BPO.

The BPO also has the major responsibility of coordinating and implementing NIPER support to other DOE and Government offices in the area of petroleum technology. This expertise is not widely available in Government and frequent requests are received for support. Currently, the BPO is overseeing NIPER support to: the Strategic Petroleum Reserve for oil analyses to determine composition and mixing effects and sludge generation chemistry; the Navy Department for assessment of thermal and storage stability of diesel and jet fuels and for establishment of physical and chemical criteria for fuels; the Air Force Department for thermodynamics; the Defense Fuels Supply Center for determination of appropriate additives to fuels to achieve mission objectives while minimizing hazardous waste generation; the Environmental Protection Agency (EPA) for investigating the effects on emissions from state-of-the-art engines when using highly refined fuels on older aviation engines and disposal of industrial wastes in deep injection wells; the Federal Aviation Agency for assessment of effects of lead phase down on older aviation engines; and other Federal agencies, by providing expert analysis and research support.

The BPO also maintains, operates and up grades the Tertiary Oil Recovery Information System (TORIS). It was initiated by BETC in 1978, and was adopted, greatly expanded, and improved by the National Petroleum Council (NPC), during their study (1982-1984) of enhanced oil recovery potential. This major system is maintained on the BPO computer and is available to support a variety of users. The system is currently used to: update and maintain the EOR Program Plan and determine research priorities for the FE program; assess the current state-of-the-art research priorities for the FE program; assess the current state-of-the-art in field test work through collecting and analyzing the annual reports filed under the DOE Tertiary Incentive Program project and case histories reported in the literature; and provide data and model runs to public bodies such as Federal agencies, individual states and the Interstate Oil Compact Commission (IOCC). Recent examples of this include evaluations of state and Federal supported incentives to promote domestic enhanced oil recovery (EOR), impacts of proposed environmental regulations on potential EOR activities, and studies of abandonments to determine potential economic recoveries in the future. BPO is expanding TORIS to include geological characterization and modeling concepts into the analytical system. On an international basis, TORIS is being used to support research annexes for simulation and analysis concepts in a wide variety of reservoir conditions.

The BPO also has a major responsibility for cooperative EOR research under International Agreements with Venezuela, Mexico, Italy, England, and Norway.

The BPO technology transfer program serves as the central communication link between the National Petroleum Research Program and the end user. It coordinates the submission, review, printing and distribution of all technical reports by EOR and AEPT contractors, which totaled nearly 37,000 copies in FY 1989. Over 13,558 requests from the petroleum research community for various DOE publications were answered. Beginning in FY 1988, other technology transfer activities were sponsored including a study by the IOCC to find better ways for DOE to accelerate, broaden, and improve the effectiveness of the transfer of R&D results; another initiative is the formation of an Oil Technology Partnership (OTP) with Los Alamos National Laboratory and Sandia National Laboratory, and the petroleum industry. The objectives are to facilitate and coordinate the development and transfer of national laboratory technology to the oil industry.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST

Summary of Activities - Metairie Site Office
(dollars in thousands)

PROGRAM	FY 1989 Actual B/A	FY 1989 Actual FTE	FY 1990 Estimate B/A	FY 1990 Estimate FTE	FY 1991 Request B/A	FY 1991 Request FTE
Overview	$ 0	3	$ 0	6	$ 0	5
Total Metairie Site Office	$ 0	3	$ 0	6	$ 0	5

NARRATIVE:

DOE's Metairie Site Office (MSO) in Louisiana provides support for the implementation of the oil and gas research program. Established in FY 1989, MSO's mission is to be the focus of the hydrocarbon research and development programs in the southeastern U.S. for the Office of Fossil Energy (FE), with a primary mission in light oil activities. MSO is devoting attention to technology transfer activities as well as management of selected research projects. MSO also has lead responsibility for the Historically Black Colleges and Universities Program within FE. As the implementation of the new Hydrocarbon Geoscience Research Strategy progresses during FY 1990, it is expected that additional areas of responsibility will be assigned to MSO.

A first step in providing implementation support has been the transfer of technical management responsibility for the Development of Novel Subsurface Oil Production Technology, Improved Gravity Drainage (IGD) Project in Caddo Parish, Louisiana, and the Louisiana Cyclic Carbon Dioxide Injection for Light Oil Recovery Project at Louisiana State University. The logic of this transfer derives from MSO proximity to the projects and specific experience afforded by MSO staff.

Similarly, in the area of technology transfer, MSO's role has been principally that of support to the Bartlesville Project Office (BPO). As a part of this support and in preparation of future activities, MSO has implemented an extensive, structured contact activity involving production companies, service companies, and universities. It is anticipated that as the FE technology transfer system expands and formalizes, MSO will have a significant role in design, implementation and evaluation of this activity.

In FY 1989, FE obligated slightly more than $1,000,000 for coal research, and personnel and facility improvement at several HBCU's. In FY 1990, Congress provided $500,000 as part of University Coal Research and instructed that justification would be required if FE wanted to expend additional funds for HBCU's. MSO is developing justification for varying levels of support.

The additional areas of responsibility to be assigned to MSO are anticipated to include environmental research and environmental compliance. Other assignments are being evaluated and decisions are expected through the remainder of FY 1990.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FOSSIL ENERGY
FACILITIES SUMMARY
Control Technology and Coal Preparation

FACILITY	DESCRIPTION	LOCATION	OWNERSHIP-TITLE FY 1989 ($M)		INVESTMENT THRU FY 1989 ($M)		FUNDING SUPPORT ESTIMATE ($M)			
							FY 1990		FY 1991	
					R&D	CAPITAL	R&D	CAPITAL	R&D	CAPITAL
	CAPABILITY		GOV'T AGENCY	OTHER	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT
TRW Molten Caustic Leaching (Gravimelt) System	This is an integrated (20 pound per hour) chemical coal cleaning system which uses molten caustic to leach sulfur and ash from coal.	Capistrano, CA	DOE owns equipment only	Site owned by TRW	0 8.7	0. 0	0 2.0	0 0	0 0	0 0
Calderon PDU	Calderon coal gasification hot gas cleanup process will use 24 tons of coal/day. Construction of the PDU is underway and is scheduled to be completed in FY 90.	Alliance, OH	No government owned property	Land owned by Calderon Energy Inc. Equipment will belong to Calderon Energy Inc.	.9 6.0	0 0	2.0 3.8	0 0	0 0	0 0
UOP 5 MWe -In operation	Fluid bed copper oxide POC test facility.	Kincaid, IL	DOE (equipment only)	Commonwealth Edison owns site	0.8 2.8	0 0	0.7 0	0 0	0 0	0 0
EPRI 5 MWe -In operation	High sulfur test facility.	Somerset, NY	DOE owns nothing	Site owned by NYSE&G, eqpt. owned by EPRI	1.9 0.2	0 0	1.9 0.2	0 0	0 0	0 0
PETC Flue Gas Cleanup Research Laboratory 0.75 MWe -In operation	Testing of various advanced technologies for flue gas cleanup.	Pittsburgh, PA	DOE (both equipment and site)	N/A	0 5.7	0 0	0 0	0 0	0 0	0 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FOSSIL ENERGY
FACILITIES SUMMARY
Coal Liquefaction

FACILITY	DESCRIPTION CAPABILITY	LOCATION	OWNERSHIP-TITLE FY 1989 ($M)		INVESTMENT THRU FY 1989 ($M)		FUNDING SUPPORT ESTIMATE ($M)			
							FY 1990		FY 1991	
					R&D	CAPITAL	R&D	CAPITAL	R&D	CAPITAL
			GOV'T AGENCY	OTHER	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT
La Porte Liquid Phase Methanol PDU	Proof-of-Concept; 35 BPD Methanol. Unit is deactivated. Engineering studies underway	La Porte, TX	DOE owns equipment only	Site owned by Air Products	2.9 27.8	0 0	0.2 1.6	0 0	0 0	0 0
Wilsonville Advanced Coal Liquefaction Facility	Advanced Liquefaction Proof-of-Concept Facility Three to six tons/day Operational in FY 1987	Wilsonville, AL	—	EPRI owns equipment. Southern Co. owns site	0 64.9	16.8 0	0 8.5	0.8 0	0 0	0 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FOSSIL ENERGY
FACILITIES SUMMARY
Combustion Systems

FACILITY	DESCRIPTION	LOCATION	OWNERSHIP-TITLE FY 1990 ($M)		INVESTMENT THRU FY 1990 ($M)		FUNDING SUPPORT ESTIMATE ($M)			
							FY 1990		FY 1991	
					R&D	CAPITAL	R&D	CAPITAL	R&D	CAPITAL
	CAPABILITY		GOV'T AGENCY	OTHER	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT
PFBC Adv. Concept	5 MWe proof-of-concept; performance testing to be constructed in 1990.	Chicago, IL	—	Foster-Wheeler	1.2 15.8	0 0	0.3 4.5	0 0	0.4 5.1	0 0
Tidd Filter Test Facility	Slip Stream Performance Testing; Construction Initiated in FY 91	Brilliant, OH	—	AEP owns	0 2.0	0 0	0 5.8	0 0	0 1.4	0 0

** Contractor cost share approximately 10% of contract cost.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FOSSIL ENERGY
FACILITIES SUMMARY
Magnetohydrodynamics

FACILITY	DESCRIPTION	LOCATION	OWNERSHIP-TITLE FY 1990 ($M)		INVESTMENT THRU FY 1989 ($M)		FUNDING SUPPORT ESTIMATE ($M)			
							FY 1990		FY 1991	
					R&D	CAPITAL	R&D	CAPITAL	R&D	CAPITAL
	CAPABILITY		GOV'T AGENCY	OTHER	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT
Component Development and Integration Facility (CDIF) for Testing of MHD Topping Cycle	50 MW (thermal) coal-fired, integrated MHD topping cycle for POC testing	Mountain States Energy, Butte, MT	Facility owned by DOE. Part of land owned by DOE	Anaconda Copper Co. owns part of the land	0 168.7	0 12.6	0 11.4	0 0	0 0	0 0
Coal Fired Flow Facility (CFFF) for Testing of MHD Bottoming Cycle	28 MW (thermal) integrated MHD bottoming cycle for POC testing	University of Tennessee Space Institute, Tullahoma, TN	Facility owned by DOE	Land is leased from UTSI	0 78.6	0 1.3	0 8.2	0 0	0 0	0 0
AVCO Everett Research Laboratory used for the Construction and Testing of MHD Channels	MHD channel development and testing for up to 20 MW (thermal)	Everett, MA	Equipment purchased under DOE contracts and is DOE property	Facilities owned by AVCO	0 41.8	.5 8.4	0 6.8	0.1 0	0 0	0 0
TRW Facilities used for the Construction and Testing of MHD Coal-Fired Combustors	Coal-fired combustor development and testing up to 50 MW (thermal)	Capistrano, CA	Equipment purchased under DOE contracts and is DOE property	Facilities are owned by TRW	0 38.2	1.8 8.3	0 7.2	0.8 0	0 0	0 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
FOSSIL ENERGY
FACILITIES SUMMARY
Surface Coal Gasification

FACILITY	DESCRIPTION	LOCATION	OWNERSHIP-TITLE FY 1990 ($M)		INVESTMENT THRU FY 1990 ($M)		FUNDING SUPPORT ESTIMATE ($M)			
							FY 1990		FY 1991	
					R&D	CAPITAL	R&D	CAPITAL	R&D	CAPITAL
	CAPABILITY		GOV'T AGENCY	OTHER	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT	INDUSTRY GOVERNMENT
Gasification Process Evaluation Facility	PDU scale in operation; 24 TPD fixed-bed gasification and turbine simulation	General Electric Corporate Research and Development Center Schenectady, NY	Owns minor equipment	General Electric Corporation owns site and major equipment	13.7 28.3	0 0	.3 1.2	0 0	0.1 .5	0 0
Gasification/Gas Clean-up PDU	PDU to test advanced gas stream clean-up concepts	Morgantown Energy Technology Center, Morgantown, WV	DOE - Office of Fossil Energy	——	0 1.8	0 0	0 1.2	0 0	0 1.1	0 0
Advanced Gasification Concepts Test Facility	Proof-of-concept scale in operation; 1.5 ton/hr entrained-flow reactor and fluid bed gasifier	Morgantown Energy Technology Center, Morgantown, WV	DOE - Office of Fossil Energy	——	0 12.8	0 0	0 1.1	0 0	0 .8	0 0
Texaco Research Facility	PDU scale entrained flow gasification system - 15 TPD gasifier, hot gas clean-up studies	Montebello, CA	No Government owned property	Texaco, Inc. owns site and equipment	1.4 5.6	0 0	0.6 2.4	0 0	.3 1.4	0 0

VOLUME 5

CLEAN COAL TECHNOLOGY

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CLEAN COAL TECHNOLOGY/INNOVATIVE CLEAN COAL TECHNOLOGY

PROPOSED APPROPRIATION LANGUAGE

CLEAN COAL TECHNOLOGY

[For necessary expenses of, and associated with, Clean Coal Technology demonstrations pursuant to 42 U.S.C. 5901 et seq., $600,000,000 shall be made available on October 1, 1990, and shall remain available until expended and $600,000,000 shall be made available on October 1, 1991, and shall remain available until expended: Provided, That projects selected pursuant to a separate general request for proposals issued pursuant to each of these appropriations shall demonstrate technologies capable of replacing, retrofitting or repowering existing facilities and shall be subject to all provisos contained under this head in Public Laws 99-190, 100-202, and 100-446 as amended by this Act.

The first paragraph under this head in Public Law 100-406 is amended by striking "$575,000,000 shall be made available on October 1, 1989" and inserting "$450,000,000 shall be available on October 1, 1989, and shall remain available until expended, and $125,000,000 shall be made available on October 1, 1990": Provided, That these actions are taken pursuant to section 202(b)(1) of Public Law 100-119 (2 U.S.C. 909).] For necessary expenses of Clean Coal Technology demonstrations pursuant to 42 U.S.C. 5901 et seq., $1,356,000,000 to remain available until expended, of which $256,000,000, including $156,000,000 made available in Public Law 101-164, shall be available October 1, 1990; $400,000,000 shall be available October 1, 1991; $475,000,000 shall be available October 1, 1992; and $225,000,000 shall be available October 1, 1993.

Explanation of Change

The Department is requesting that Congress spread out the advance appropriations provided for Rounds 4 and 5 of the program in the following manner: Round 4 - FY 1991 $ 100 million; FY 1992 $250 million, and FY 1993 $250 million. Round 5 - FY 1992 $150 million; FY 1993 $225 million; and FY 1994 $225 million.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CLEAN COAL TECHNOLOGY

OVERVIEW

CLEAN COAL TECHNOLOGY/INNOVATIVE CLEAN COAL TECHNOLOGY PROGRAM

Coal is the most abundant energy resource in the United States with recoverable reserves estimated to be 935 billion barrels crude oil equivalent (COE). However, petroleum and natural gas, whose proven reserves are estimated to be 28 billion barrels and 35 billion barrels COE respectively, are the most utilized fossil fuels in the U.S. energy consuming marketplace despite their significantly higher cost relative to coal. Even though oil and natural gas prices are projected to remain significantly higher than coal, their demand is expected to remain relatively the same as it was in 1984.

The utilization of coal is demand driven and an enormous under utilized capacity exists than can accommodate a significant increase in demand. To make coal utilization more attractive, the Department of Energy and the private sector have been conducting research through proof-of-concept on a wide variety of coal technologies aimed at improving the economics of using coal, improving the environmental performance associated with its use, and developing new forms into which coal can be converted that could allow it to be used as a lower cost substitute for oil and natural gas. One of the principal activities in the area of improving environmental performance and utilization efficiency is the Clean Coal Technology Program.

The Clean Coal Technology Program is related to, but not directly a continuation of, the effort undertaken by DOE pursuant to Section 321 of P.L. 98-473, which directed the Secretary of Energy to solicit from the private sector "statements of interest in, and proposals for projects employing emerging clean coal technologies," analyze the information received, and submit a report to Congress that "assesses the potential usefulness of each emerging clean coal technology... and ...identify the extent to which federal incentives, including financial assistance, would accelerate the commercial availability of these technologies." In response to the submissions with project values totaling over $8 billion. On May 1, 1985, DOE submitted its finding in the "Report to Congress on Emerging Clean Coal Technologies" (DOE/S-0034).

In August 1985, the President signed into law H.R. 2577, "Making Supplemental Appropriations for the Fiscal Year Ending September 30, 1985, and for Other Purposes." The Conference Report 99-236 accompanying H.R. 2577 advised DOE to immediately begin the preparation of a competitive solicitation for cost-shared clean coal technology projects, to consult with the Environmental Protection Agency (EPA) on technologies traditionally supported by EPA and on environmental regulatory considerations, and provided guidelines for the preparation of the solicitation in addition to those cited earlier in the accompanying Senate Report 99-82.

On December 19, 1985, P.L. 99-190 was signed into law. This statute, among other things, provides funds to conduct cost-shared clean coal technology projects for the construction and operation of facilities that would demonstrate the feasibility of future commercial applications of such technology.

P.L. 99-190 made available a total of $397.6 million for this program. These funds were distributed over a three year period as follows: $99.4 million in FY 1986, $149.1 million in FY 1987, and $149.1 million in FY 1988. Funding is provided from the $397.6 million for contracting, travel, and ancillary costs incurred by the Department of Energy for implementation of the Clean Coal Technology Program. P.L. 99-190 also requires a minimum of 50 per centum cost sharing by the private sector on each project, cost sharing in each phase of each project, constraints on valuation of "in-kind" cost sharing by the private sector, time limitations for issuing the solicitations, proposal preparation and project selection(s), among other things.

In accordance with the earlier guidance and P.L. 99-190, the Clean Coal Technology program solicitation was issued on February 18, 1986, with a closing date of April 18, 1986. The 51 proposals that were received were evaluated and nine projects were selected for negotiations on July 24, 1986. Negotiations were successfully completed with the sponsors of seven of these projects. Subsequent to the withdrawal from consideration of the two remaining projects by their sponsors, four replacement projects were selected for negotiation on October 7, 1987. To date, two of these projects have resulted in executed cooperative agreements and negotiations are continuing on the third project. As of December 8, 1988, the fourth substitute project was cancelled as there appeared to be no viable option for concluding negotiations. On December 9, 1988, three additional projects were selected for negotiation, bringing the total to thirteen projects that are part of the first round funding for clean coal technology. On June 23, 1989, another of the original nine projects was cancelled and the only remaining alternate was selected for negotiation.

On March 18, 1987, the President made a decision to seek the full amount of the Government's share of funding recommended by the Joint Envoys on acid rain, Drew Lewis of the United States and William Davis of Canada. This decision will provide $2.5 billion for demonstration of innovative clean coal technologies, provided that appropriate projects are proposed that meet the program's cost-sharing requirements (50% or greater).

On December 22, 1987, P.L. No. 100-202, "An Act Making Appropriations for the Department of the Interior and Related Agencies for the Fiscal Year Ending September 30, 1988, and for Other Purposes" (the "Act"), was signed into law. This Act, among other things, provided funds to conduct cost-shared Innovative Clean Coal Technology (ICCT) projects to demonstrate emerging clean coal technologies that are capable of retrofitting or repowering existing facilities.

The Act made available a total of $575 million for this program, as follows: $50 million in Fiscal Year 1988 and $525 million in Fiscal Year 1989. Of the $50 million, $18.512 million was set aside for Program Direction and $.394 million was set aside for the Small Business and Innovative Research Program. The remaining funds were made available for award under a program opportunity notice released on February 22, 1988.

In the FY 1989 Appropriation Act, P.L. No. 100-446, Congress modified the funding for the advanced appropriation ($525 million) for the second solicitation by appropriating $190 million for FY 1989 and advanced appropriations of $135 million in FY 1990 and $200 million in FY 1991. Congress also provided an additional $575 million in advanced appropriations in FY 1990 for a third solicitation.

On May 23, 1988, DOE received 55 Innovative Clean Coal Technology program proposals. Project selection was completed on September 28, 1988. Sixteen projects with an aggregate value of $1.3 billion were selected to participate in negotiations for the second round of the program. The original FY 1990 budget request continued to stretch out the program in accord with the FY 1989 Appropriation Act.

In the FY 1990 Appropriation Act, P.L. No. 101-121, Congress modified the funding for the advanced appropriation ($575 million) for the third solicitation by appropriating $419 million for FY 1990 and $156 million for FY 1991. The third solicitation was issued on May 1, 1989, and 48 proposals were received. Thirteen projects were selected for negotiation on December 21, 1989. In addition to this, Congress provided $600 million each in advance appropriations for FY 1991 and FY 1992 for Rounds 4 and 5 of the program.

This request continues the trend established by Congress to spread out the advanced appropriations over several fiscal years. It does, however, request all of the necessary funds to complete the $2.5 billion program. $100 million is being requested in FY 1991 for Round 4 with the remainder of Round 4 funding to be spread to FY 1992 ($250 million) and FY 1993 ($250 million). It is also proposed that the $600 million advance appropriated for Round 5 in FY 1992 be spread in the following manner: $150 million in FY 1992, $225 million in FY 1993, and $225 million in FY 1994.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CLEAN COAL TECHNOLOGY
(dollars in thousands)

LEAD TABLE

Clean Coal Technology

Activity	FY 1989	FY 1990[a]	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
CCT/ICT #2 (new BA)						
Cooperative agreements:						
Operating expenses	$173,800	$135,000	$135,000	$200,000	$+65,000	+48
Program direction:						
Operating expenses	14,000	0	0	0	0	0
Subtotal	187,800	135,000	135,000	200,000	+65,000	+48
CCT/ICT #3 (new BA)						
Cooperative agreements:						
Operating expenses	0	396,452	396,452	156,000	-240,452	-61
Program direction:						
Operating expenses	0	22,548	22,548	0	-22,548	-100
Subtotal	0	419,000	419,000	156,000	-263,000	-63
CCT/ICT #4 (new BA)						
Cooperative agreements:						
Operating expenses	0	0	0	75,000	+75,000	+100
Program direction:						
Operating expenses	0	0	0	25,000	+25,000	+100
Subtotal	0	0	0	100,000	+100,000	+100
Total CCT/ICCT Program	$187,800	$554,000	$554,000	$456,000	$- 98,000	-18
Staffing Total FTE's: Direct	0	0	0	0		
Indirect	53	55[b]	55[b]	60[b]		

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[a] FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P. L. 101-164 reductions to fund anti-drug activities.

[b] Total FTE's do not include 3 FTE's within the Office of Environment, Safety and Health.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(dollars in thousands)

SUMMARY OF CHANGES

Clean Coal Technology/Innovative Clean Coal Technology

FY 1990 Appropriation	$554,000
Cooperative Agreements	
o Continue second round solicitation projects that focus on demonstrating technologies which are capable of retrofitting, repowering, or modernizing existing coal using facilities using prior year funding and new budget authority	+64,187
o Continue third round solicitation projects that focus on demonstrating technologies which are capable of retrofitting, repowering, or modernizing existing coal using facilities using prior year funding and new budget authority	-237,446
o Select and negotiate projects for the fourth round solicitation	+74,062
o Provide funding for the Small Business Innovative Research program	-1,255
Program Direction	
o Provide funding for salaries, benefits, and travel expenses for 60 FTE's in support of a significantly greater number of second ICCT solicitations and subsequent selection of projects	+2,452
FY 1991 Congressional Budget Request	$456,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CLEAN COAL TECHNOLOGY
(dollars in thousands)

KEY ACTIVITY SUMMARY

CLEAN COAL TECHNOLOGY/INNOVATIVE CLEAN COAL TECHNOLOGY (CCT/ICCT)

I. **Preface: Clean Coal Technology/Innovative Clean Coal Technology (CCT/ICCT)**

The initial goal of the program was, as stated in P.L. 99-190, "for the purposes of conducting cost-shared clean coal technology projects for the construction and operation of facilities to demonstrate the feasibility of future commercial operation." The Administration proposes to build on the existing program and expand the program to support the Joint Envoys' recommendations on the demonstration of innovative clean coal technologies. P.L. 99-190 made available a total of $397.6 million for this program. These funds were distributed over a three year period as follows: $99.4 million in FY 1986, $149.1 million in FY 1987, and $149.1 million in FY 1988.

The FY 1989 appropriation reflected a continuation of the program as proposed in the President's March 1987 Acid Rain Initiatives message which requested an additional $2.5 billion in spending for innovative clean coal technology demonstrations to be at least 50 percent cost shared by the participants. These demonstrations will be targeted to the criteria as specified in the Envoys' Report and amended based on advice from the Innovative Clean Coal Technology Panel or additional criteria mandated by Congress. The ICCT solicitation provides financial assistance awards for projects that employ innovative technologies capable of retrofitting, replacing or repowering of existing facilities. In the FY 1989 Appropriation Act, Congress modified the funding for the advanced appropriation for the second solicitation by appropriating $190 million for FY 1989 and advanced appropriations for FY 1990 of $135 million and $200 million for FY 1991 for ICCT, and $575 million for a third solicitation that was issued on May 1, 1989. The FY 1990 appropriation modifies the funding for the advanced appropriation for the third solicitation by providing $419 million for FY 1990 and $156 million for FY 1991; as well as advance appropriates $600 million for FY 1991 and FY 1992 respectively. The FY 1991 budget follows the pattern Congress has established, with appropriations spread out over the timeframe in which they will be needed. It includes appropriations of $200 million for Round 2, $156 million for Round 3 and $100 million for Round 4. In addition, it proposes advance appropriations for the rest of Round 4 and all of Round 5 in the following manner: $400 million in FY 1992, $475 million in FY 1993, and $225 million in FY 1994.

II. A. **Summary Table:**

Program Activity	FY 1989	FY 1990	FY 1991	% Change
Cooperative Agreements				
CCT 1	$0	$0	$0	0
CCT 2	173,800	135,000	200,000	+48
CCT 3	0	396,452	156,000	-61
CCT 4	0	0	75,000	+100
Subtotal	173,800	531,452	431,000	-19
Program Direction				
CCT 1	0	0	0	0
CCT 2, 3, and 4	14,000	22,548	25,000	+11
Subtotal	14,000	22,548	25,000	+11
Total Clean Coal Technology	$187,800	$554,000	$456,000	-18

B. Major Laboratory and Facility Funding	FY 1989	FY 1990	FY 1991	% Change
Energy International	245	0	0	0
Colorado Ute	19,920	0	0	0
TRW	6,125	0	0	0
Argonne National Laboratory	872	700	700	0
Lawrence Berkeley Laboratory	175	0	0	0
Oak Ridge National Laboratory	1,109	750	1,000	+33
Babcock & Wilcox	3,928	0	0	0
Energy & Environmental Research	975	0	0	0
Coal Tech Corp.	97	0	0	0
Combustion Engineering	0	4,400	0	-100
Southwestern Public Service	0	2,200	0	-100
American Electric Power	0	11,500	0	-100
Pure Air	0	16,500	0	-100
Southern Company Services	0	3,150	0	-100
Passamaquoddy Tribe	0	4,110	0	-100
Babcock & Wilcox	0	2,500	0	-100
Bethlehem Steel	0	11,916	0	-100
Southern Company Services	0	11,700	0	-100
Trans Alta Resources	0	3,600	0	-100
Southern Company Services	0	6,900	0	-100
Babcock & Wilcox	0	3,200	0	-100
Combustion Engineering	0	6,350	0	-100

III. Activity Description: Clean Coal Technology/Innovative Clean Coal Technology

Program Activity	FY 1989	FY 1990	FY 1991
Solicitation CCT-1 Cooperative Agreements	Complete negotiations on four cooperative agreements. Continue design and initiate construction of remaining projects, and complete construction on many projects and initiate or continue operational test program for several development efforts utilizing prior year funding. ($0) (Foster Wheeler, United Coal, Western Energy Co., Combustion Engineering.)	Complete negotiations on remaining projects, complete construction on remaining projects and continue the operational test programs for projects remaining from first CCT solicitation using prior year funding. ($0)	Complete construction on remaining projects and continue the operational test programs for projects remaining from first CCT solicitation using prior year funding. ($0)
	0	0	0
Solicitation CCT/ICCT-2 Cooperative Agreements	Negotiated and initiated design and construction on 16 selected projects resulting from the new solicitation for financial assistance that will focus on retrofit, repowering and modernization projects. ($173,800) Transferred a total of $2,200 in FY 1989 to the Small Business Innovative Research program. ($0)	Complete negotiations on remaining projects for the second round solicitation. Continue construction on many projects and initiate or continue operational test programs for several development efforts. ($133,313) Proposed funding for Small Business Innovative Research program. ($1,687)	Complete construction on several projects and continue the operational test programs for projects for several development efforts. ($197,500) Final CCT-2 funding increment for Small Business Innovative Research. ($2,500)
	173,800	135,000	200,000

III. Activity Description: Clean Coal Technology/Innovative Clean Coal Technology (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Third Round Solicitation	Issued solicitation for 3rd round on May 1, 1989. ($0)	Select and negotiate projects for the third round solicitation to demonstrate clean coal technologies. ($391,496)	Complete selections and negotiations on all cooperative agreements, initiate construction on most projects selected in the 3rd round and begin operational test programs to produce data required utilizing prior year funding, and funds deferred into FY 1991. ($154,050)
	No activity. ($0)	Proposed funding for Small Business Innovative Research program. ($4,956)	Proposed funding for Small Business Innovative Research Program. ($1,950)
	0	396,452	156,000
Fourth Round Solicitation	No activity. ($0)	Issue solicitation for 4th Round scheduled for June 1990. ($0)	Select and negotiate projects for the fourth round solicitation to demonstrate clean coal technologies. ($74,062)
			Proposed funding for Small Business Innovative Research Program. ($938)
	0	0	75,000
Program Direction	Continue support of operational test program projects in first CCT solicitation using prior year funding. Continue to provide required support for significantly greater second ICCT solicitation and subsequent selection of projects from large number of submissions using prior year funding. ($0)	Continue support of operational test program projects in first CCT solicitation using prior year funding. Continue to provide required support for significantly greater second ICCT solicitation and subsequent selection of projects from large number of submissions using prior year funding. ($0)	Provide support for project selections under CCT-3 and prepare for future solicitations. ($5,000)
	Continue efforts to prepare necessary evaluations, status reports, presentations, etc. as may be required to describe the expanded program and its progress toward accomplishing the existing as well as added objectives. Continue project technology, and market assessments required to evaluate and direct the greater number of projects selected to demonstrate innovative control technologies. Continue analysis of project data and results to ensure consistency with intent of Special Envoys' Report and program objectives. ($5,940)	Continue efforts to prepare necessary evaluations, status reports, presentations, etc. as may be required to describe the expanded program and its progress toward accomplishing the existing as well as added objectives. Continue project technology, and market assessments required to evaluate and direct the greater number of projects selected to demonstrate innovative control technologies. Continue analysis of project data and results to ensure consistency with intent of program objectives. Conduct future solicitations for additional clean coal technology projects suited to accomplish the goals of the program. ($10,773)	Continue efforts to prepare necessary evaluations, status reports, presentations, etc. as may be required to describe the expanded program and its progress toward accomplishing the existing as well as added objectives. Continue project technology, and market assessments required to evaluate and direct the greater number of projects selected to demonstrate innovative control technologies. Continue analysis of project data and results to ensure consistency with intent of program objectives. Conduct future solicitations for additional clean coal technology projects suited to accomplish the goals of the program. ($9,828)

III. Activity Description: Clean Coal Technology/Innovative Clean Coal Technology (cont'd)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction (cont'd)	Continue environmental assessment studies and operational monitoring programs for projects selected in the initial CCT solicitation using prior year funds. Continue expanded environmental evaluation and data acquisition program required to implement NEPA requirements for each additional project as well as the expanded program. ($3,880) Provide for salaries, benefits, travel expenses, etc. for 53 FTE's. ($4,180)	Continue environmental assessment studies and operational monitoring programs for projects selected in the initial CCT solicitation using prior year funds. Continue expanded environmental evaluation and data acquisition program required to implement NEPA requirements for each additional project as well as the expanded program. ($7,340) Provide for salaries, benefits, travel expenses, etc. for 55 FTE's. ($4,435)	Continue environmental assessment studies and operational monitoring programs for projects selected in the initial CCT solicitation using prior year funds. Continue expanded environmental evaluation and data acquisition program required to implement NEPA requirements for each additional project as well as the expanded program. Includes AOSS workstation support. ($5,000) Provide for salaries, benefits, travel expenses, etc. for 60 FTE's. ($5,172)
	14,000	22,548	25,000
	187,800	554,000	456,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET
FOSSIL ENERGY RESEARCH AND DEVELOPMENT
(in thousands of dollars)

OBJECT CLASS

(Clean Coal Technology)

		1989 ACTUALS		1990 ESTIMATE		1991 ESTIMATE	
		FTE	AMOUNT	FTE	AMOUNT	FTE	AMOUNT
Direct Funding:							
11.0	Personnel compensation:						
11.1	Full-time permanent	53	2,846	55	2,993	55	3,170
11.3	Other than full-time permanent		21		0		0
11.5	Other personnel compensation		17		0		0
11.8	Special personal services payments		0		0		0
11.9	Total personnel compensation	53	2,884	55	2,993	55	3,170
12.1	Personnel benefits-civilian		530		550		582
13.0	Benefits for former personnel		0		0		0
21.0	Travel and transport of persons		541		582		602
22.0	Transportation of things		0		0		0
23.2	Comm., util., and other rent		52		56		58
24.0	Printing and reproduction		34		37		38
25.0	Other services		38,227		210,374		367,439
26.0	Supplies and materials		100		108		111
31.0	Equipment		0		0		0
32.0	Lands and structures		0		0		0
41.0	Grants, subsidies, and contributions		0		0		0
42.0	Insurance claims and indemnities		0		0		0
43.0	Interest and dividends		0		0		0
Totals		53	42,368	55	214,700	55	372,000

VOLUME 5

NAVAL PETROLEUM AND OIL SHALE RESERVES

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

PROPOSED APPROPRIATION LANGUAGE

For necessary expenses in carrying out naval petroleum and oil shale reserve activities [$192,124,000] $210,610,000, to remain available until expended [Provided, that sums in excess of $510,000,000 received during fiscal year 1990 as a result of the sale of products produced from Naval Petroleum Reserves Numbered 1 and 3 shall be deposited in the "SPR petroleum account", to remain available until expended, for the acquisition and transportation of petroleum and for other necessary expenses.] 1/ (Public Law 101-121, making appropriations for the Department of Interior and Related Agencies, 1990.)

Explanation of Change

1/ Deletes language which had specific application to fiscal year 1990 to provide additional funds for SPR fill. The language is not required for the fiscal year 1991 budget proposal.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES

OVERVIEW

NAVAL PETROLEUM AND OIL SHALE RESERVES

Pursuant to the Naval Petroleum Reserves Production Act of 1976, the Naval Petroleum Reserves (NPR) are produced at their maximum efficient rates (MER), and the petroleum may be sold competitively in the open market, or transferred to the Department of Defense or the Strategic Petroleum Reserve. Production of the Reserves is currently authorized through April 5, 1991.

The budget proposes to lease two commercial oil fields the Department of Energy now operates -- Elk Hills in California and Teapot Dome in Wyoming.

These properties are a national anomaly. They are called Naval Petroleum Reserves because they were originally set aside before World War I to provide oil for the Navy as it converted its fleet from coal to oil. But today they are operating oil fields, not reserves, supplying oil and gas for the civilian economy, not the Navy. They are run by the Federal Government with contractor support, with operations financed through annual appropriations and sale proceeds deposited in the Treasury. The Department of Defense retains the right to interrupt these commercial sales should a supply emergency occur, but as a practical matter the oil is not readily accessible for Defense needs.

Rather than continue Government operation of these properties, the budget proposes to lease them competitively to private industry, in a manner consistent with the time-tested approach used to develop other Federal energy and mineral resources. These oil fields would be leased to the highest bidder in return for up-front bonus payments to the Treasury of $1.0 billion in 1991 and $ 0.3 billion in both 1992 and 1993, plus an annual royalty payment equal to a percentage of the oil and gas produced at each property. The right to produce oil and gas would be awarded to the parties offering the highest annual royalty payment.

The budget also proposes to use part of the royalty payments resulting from leasing the NPRs to establish a ten million barrel Defense Petroleum Inventory (DPI). The DPI would be available solely for use by the Department of Defense to deal with a range of possible supply disruptions.

These proposals have a number of budgetary and programmatic advantages. They reduce the budget deficit by $1 billion in 1991. They allow the Federal Government to retain ownership of these assets while protecting Federal financial interests in them. They assure that the Government will get full and fair market value for these assets. They sharpen incentives to run the oil fields as efficiently as possible. A lease arrangement would eliminate the need for the Federal Government to commit a hundred million dollars of investment in the next few years for new production facilities, including a gas processing plant and an isomerization plant needed to maintain and increase oil and gas production. It will be very difficult to fund these requirements through the appropriations process. In addition, creation of a DPI will enhance U.S. energy security consistent with the original reason for the establishment of the NPRs. Finally, by ensuring more active and efficient operation of the two sites, they maximize tax revenues to the affected States and employment for local citizens.

The Department expects to develop its plans for leasing the NPRs working closely with interested members of Congress and Congressional staff.

Until legislation authorizing leasing is enacted into law and the leasing process is completed (targeted for the end of 1991), the Department will continue to operate the oil fields in a sound and prudent manner. The FY 1991 budget request is $210.6 million, an increase of $21.2 million over FY 1990, and provides for operating the NPRs through the end of FY 1991. Continued operations at both Reserves will focus on increasing recovery and revenues by production and maintenance of existing wells, pressure maintenance, development of gas resources, systematic drilling for continued reservoir development, and application of enhanced oil recovery techniques. Program activities are directed at operating and maintaining the Reserves, producing at MER and increasing hydrocarbon recovery efficiency. As reservoirs and facilities mature, additional funds are needed to accommodate ever-increasing volumes of natural gas and water associated with oil production, and to implement the increasingly complex development strategies required to maintain MER production.

Total receipts from the sale of petroleum and related products from the Reserves in FY 1989 were $631 million. Revenues are estimated at $630 million in FY 1990 and $620 million in FY 1991. Oil prices are estimated at approximately $16-17 per barrel in FY 1990 and FY 1991.

Receipts from sales are transferred to the U.S. Treasury and deposited in the Miscellaneous Receipts account. Chevron U.S.A., Inc., which owns approximately 22 percent of NPR-1, reimburses the Government for its share of unit operations at NPR-1. These reimbursements are also deposited in the Miscellaneous Receipts account. NPR-2 lease royalties and other miscellaneous revenues contribute approximately $1.5 million per year to the U.S. Treasury.

NPR-1, Elk Hills, located near Bakersfield, California, is operated under a unitization agreement (Unit Plan Contract) between the Government and Standard Oil Company of California (Chevron U.S.A., Inc.). Under this agreement, the Government establishes the time and rate of production, but all exploration, prospecting, development and producing operations on the Reserve are conducted under the supervision and direction of a two-member Operating Committee consisting of one Government Member and one Chevron Member. The Unit Operator is Bechtel Petroleum Operations, Inc. (BPOI), which is under a 5-year, cost-plus-award-fee contract with the Government which began August 1, 1985. The 5-year option on BPOI's operating contract has been executed extending the contract through August 1, 1995; however, the contract will be terminated in an orderly fashion when Elk Hills is leased.

Total production at NPR-1 in FY 1989 averaged 96,800 BOPD (Government's share 75,500 BOPD), 369 MMCF/D of natural gas and 634 MGAL/D of liquid gas products. Production in FY 1990 is expected to average approximately 91,700 BOPD (Government's share 71,600 BOPD), 376 MMCF/D of natural gas and 669 MGAL/D of liquid gas products. In FY 1991, production is estimated at 85,700 BOPD (Government's share 66,900 BOPD), 390 MMCF/D of natural gas and 690 MGAL/D of liquid gas products. The Government's share of production varies by geologic zone, averaging approximately 78 percent of total production.

The current development and exploration programs at NPR-1 were initiated in FY 1975. From that time through FY 1988, 1,094 development wells and 40 exploration wells had been drilled. Twenty new development wells were drilled in FY 1989, 28 development wells are scheduled for FY 1990, and 26 development wells are planned for FY 1991. The current level of drilling reflects fewer primary drilling opportunities. Decisions to develop the reservoirs on closer well-spacing (e.g., 1 well per 10 acres versus 1 well per 20 acres) would lead to a substantially more active drilling program. Both the FY 1990 and FY 1991 drilling programs consist primarily of additional wells to support waterflood activities in the Stevens Zone and steamflood expansion in the Shallow Oil Zone.

The exploratory program provided for extensive testing of four exploratory wells (including the deep test well) in FY 1989. The FY 1990 program provides for additional testing of completed wells, and a seismic reprocessing program. The data obtained will be used to determine the potential for commercial development of any hydrocarbon discoveries, identify future sites for exploration, and aid reservoir development strategies by adding to the geologic knowledge of the Reserve. The FY 1991 request provides for the completion of the FY 1990 testing program.

The Development Facilities category is an ongoing element of the NPR-1 program, meeting construction and modification requirements in response to changing field conditions. As the field matures, changes in reservoir pressures and increasing amounts of gas and water are being encountered. The facilities requested are needed to maintain the field's maximum efficient rate of production, enhance ultimate recovery and respond to increasing environmental regulatory compliance programs, especially in the areas of air quality, water quality and hazardous waste. Significant projects in FY 1991 include the repair and replacement of corroded pipelines, artificial lift, compressor optimization, and closed loop gas lift.

NPR-3, Teapot Dome, located near Casper, Wyoming, produced an average of 2,300 BOPD, 9 MMCF/D of natural gas, and 11 MGAL/D of liquid gas products in FY 1989. Production is estimated to increase to 2,500 BOPD in FY 1990 and 2,600 BOPD in FY 1991 with steamflood expansion. Natural gas production will remain level in FY 1990 and FY 1991 at 8 MMCF/D. Liquid gas production is estimated at 6 MGAL/D in FY 1990 and 6 MGAL/D in FY 1991. Substantial cost saving measures have been implemented at NPR-3 in order to maintain net positive cash flow to the Government. The budget also proposes that Teapot Dome be leased competitively at the earliest date practical. The property would be leased to the party that offers the Government the highest royalty percentage of gross production revenues. Leasing the rights to produce oil and gas there allows the Federal Government to focus limited time, attention, and other resources on governmental rather than commercial activities. It also allows the Federal Government to retain ownership of the asset.

A program to fully develop NPR-3 was initiated simultaneously with the decision to open-up in FY 1976. The drilling program has resulted in 747 development wells drilled since that time. Fifteen development and infill wells were drilled in FY 1989 with 48 wells planned in FY 1990. In an effort to increase production from areas of the Shannon Reservoir which were not amenable to EOR, an infill drilling program was initiated, consisting of 30 wells, in FY 1987. An additional 30 Shannon infill wells are scheduled as part of the drilling program for FY 1990 depending on oil prices and production levels. As many as 150 infill wells could be drilled in future years by the party that leases the property, if it is shown to be economical. Due to funding constraints, only 5 Shannon infill wells are planned for FY 1991.

Further development of NPR-3 is predicated on the successful application of enhanced recovery methods. Initial expansion of the steam drive project in the Shannon Reservoir began in FY 1988 with favorable response and will continue in FY 1990 with the purchase of a fourth steam generator and installation of the third steam generator. Each steam generator will inject into four 10-acre patterns for a period of 4-5 years, at which time, it is estimated the patterns will be depleted. The generators will then be moved to succeeding patterns over the life of the project, estimated at 23 years. The contractor operator at NPR-3 is Lawrence-Allison and Associates West, Inc., which began its second 5-year cost-plus-award-fee contract October 1, 1986.

In concert with Fossil Energy, funding of $1.0 million is requested for a research oriented alkaline-surfactant-polymer (ASP) EOR pilot study. The ASP process has been laboratory proven to displace oil with the efficiency of a surfactant flood but at a fraction of the cost, an especially attractive feature given the volatile energy market. The Northern Second Wall Creek Reservoir has been identified as a prime candidate for this process with a potential of up to 7 million barrels of recoverable oil.

The Naval Oil Shale Reserves program in FY 1991 provides funds to protect and maintain the Government's resources. This includes continued surface resource management conducted under an interagency agreement with the Bureau of Land Management, continued environmental monitoring of the spent shale pile at NOSR-3, demolition of the few remaining buildings at the NOSR-1 oil shale mine bench and asbestos removal and disposal, and operation and maintenance of both Government and communitized wells in the Parachute and Rulison Fields.

The program requires staffing of 91 FTEs in FY 1991. The Administration intends to provide appropriate staffing levels when NPR production continues under a leasing program. Few if any staff reductions are anticipated because manpower would still be needed to monitor production and environmental activities, verify payments and manage the program.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

LEAD TABLE

Naval Petroleum and Oil Shale Reserves

	FY 1989 Actual	FY 1990 Appropriation	FY 1991 Base	FY 1991 Request	Program Change Request v. Base Dollar	Program Change Request v. Base Percent
Reserves Nos. 1 & 2						
Operations & Maintenance.....	$115,416	$131,171	$131,171	$140,100	$+ 8,929	+ 7%
Development Drilling.........	19,000	11,009	11,009	17,500	+ 6,491	+ 59%
Exploration Drilling.........	4,000	2,493 1/	2,493	500	- 1,993	- 80%
Development Facilities.......	23,200	33,017	33,017	27,000	- 6,017	- 18%
Subtotal..............	$161,616	$177,690	$177,690	$185,100	$+ 7,410	+ 4%
Reserve No. 3						
Operations & Maintenance.....	$ 14,279	$ 12,890	$ 12,890	$ 14,309	$+ 1,419	+ 11%
Development Drilling.........	3,057	2,077 1/	2,077	253	- 1,824	- 88%
Development Facilities.......	---	433	433	3,820	+ 3,387	+ 782%
Subtotal..............	$ 17,336	$ 15,400	$ 15,400	$ 18,382	$+ 2,982	+ 19%
Naval Oil Shale Reserves.......	$ 200	$ 197 1/	$ 197	$ 408	$+ 211	+ 107
Program Direction..............	$ 5,919	$ 6,152 1/	$ 6,152	$ 6,720	$+ 568	+ 9%
Subtotal.......................	$185,071	$199,439	$199,439	$210,610	$+11,171	+ 6%
Use of Prior Year Balance......	---	- 10,000	- 10,000	---	+10,000	+ 100%
Total..........................	$185,071	$189,439	$189,439	$210,610	$+21,171	+ 11%
Staffing (FTE).................	92	89	89	91		

1/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

SUMMARY OF CHANGES

Naval Petroleum and Oil Shale Reserves

FY 1990 Appropriation	$ 189,439
Use of Prior Year Balance	+ 10,000
Reserves Nos. 1 & 2 - Operations & Maintenance Increase due to higher water production and injection rates, outside gas processing, electricity and facilities engineering for repair projects.	+ 8,929
- Development Drilling Increase due to drilling more Stevens wells.	+ 6,491
- Exploration Drilling Decrease due to no new well tests planned.	- 1,993
- Development Facilities Decrease due to reduction in miscellaneous safety and production projects and capital equipment.	- 6,017
Reserve No. 3 - Operations & Maintenance Increase due to additional pattern of steamflood project in operation.	+ 1,419
- Development Drilling Decrease due to less wells planned for drilling.	- 1,824
- Development Facilities Increase due to installation of fourth steam generator and ASP EOR pilot project.	+ 3,387
Naval Oil Shale Reserves Increase due to NOSR-1 environmental clean-up and NOSR-3 O&M activities.	+ 211
Program Direction Increase due to Federal salary adjustments and miscellaneous contractual services.	+ 568
FY 1991 Congressional Budget Request	$ 210,610

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY SUMMARY

NAVAL PETROLEUM AND OIL SHALE RESERVES

I. Preface: Reserves 1 and 2 (California)

The objectives at Reserves Nos. 1 & 2 are to produce the field at the maximum efficient rate consistent with sound engineering practices and without detriment to ultimate recovery, to further explore, develop and operate the Reserves and to sell or otherwise dispose of petroleum products. To this end, activities are conducted in four major areas: Operations & Maintenance (O&M), Development Drilling, Exploration Drilling, and Development Facilities. O&M funds the daily activities necessary to operate and produce the Reserves. This includes the maintenance and repair of facilities and equipment, financial management, engineering expertise to direct and monitor development of the Reserves, administrative support, legal services, remedial workovers, environmental protection, safety, security, and quality assurance support. O&M encompasses operating and maintaining all facilities and programs including: approximately 1,200 active wells, 86 tank settings, 70 gas/oil separation stations, 700 miles of pipeline, 5 oil-cleaning/Lease Automatic Custody Transfer stations, 5 waste water disposal facilities, 4 water injection facilities, 3 gas processing plants, 11 gas compression plants, 45 product storage tanks, 1 gas injection plant, and numerous pumps and compressors. Development Drilling provides for the wells necessary to development and maintain production. While primary development of the Reserves has been completed, some infill production wells will continue to be drilled. However, the focus of the drilling program will be on the wells required to support recovery techniques such as waterflood and steamflood. This can include injection wells (water, gas and steam), new producers, water source wells and water disposal wells. Exploration Drilling funds the drilling of wells to discover new hydrocarbon resources, define reservoir limits and increase the ultimate recovery potential of the Reserves. In addition, it provides geological data which is used in the formulation and refinement of the various development strategies necessary to produce the field's proven reserves and to delineate additional areas or zones that merit evaluation. Exploration strategy will focus on deeper pool test targets such as the Carneros and the Point of Rocks sands, and also examine major structural flanks for stratigraphic traps. Development Facilities provides for the design and construction of facilities necessary to sustain field production at MER, to increase the profitability of NPR-1 operations and to ensure compliance with environmental, health and safety regulations. This includes construction to implement new development initiatives, modifications of existing facilities to respond to changing field conditions, such as increasing amounts of low pressure gas and water, and to meet applicable environmental and safety regulations.

II. A. Summary Table: Reserves 1 and 2 (California)

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Operations & Maintenance				
Production Operations...........................	$ 68,616	$ 80,471	$ 88,600	+ 10
Management & Administration....................	25,600	27,000	26,000	- 4
Technical Services.............................	21,200	23,700	25,500	+ 8
Subtotal, Operations & Maintenance	$ 115,416	$ 131,171	$ 140,100	+ 7

II. A. Summary Table: Reserves 1 and 2 (California) - Cont'd

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Development Drilling	$ 19,000	$ 11,009	$ 17,500	+ 59
Exploratory Drilling	4,000	2,493	500	- 80
Development Facilities	23,200	33,017	27,000	- 18
Production	0	0	0	0
Sales	0	0	0	0
Revenues	0	0	0	0
Total, Reserves 1 and 2 (California)	$ 161,616	$ 177,690	$ 185,100	+ 4

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory	$ 727	$ 181	$ 0	-100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Reserves 1 and 2 (California)			
Operations & Maintenance			
Production Operations	Provided routine O&M activities for crude oil and gas production, distribution, processing and sales systems; electricity and power systems; buildings and facilities; waterflood and steamflood programs; and completed 218 remedial well workover jobs and installation and testing of NOx compliance equipment.	Provide routine O&M activities for crude oil and gas production, distribution, processing and sales systems; remedial well workovers (236 jobs); electricity and power systems; buildings and facilities; waterflood and steamflood programs. Increase is due to more remedials, higher water production (+16,200 BWPD) and water injection (+16,000 BWPD), and purchase of compressor and repair parts to maintain recently installed NOx equipment.	Provide routine O&M activities for crude oil and gas production, distribution, processing and sales systems; remedial well workovers (234 jobs); electricity and power systems; buildings and facilities; waterflood and steamflood programs. Increase is due to water treatment costs associated with higher water production (+19,800 BWPD) and water injection (+21,000 BWPD); additional outside gas processing requirements; and additional electricity costs for anticipated rate increases and higher consumption due to facilities brought on line in late FY 1990.
	$ 68,616	$ 80,471	$ 88,600

III. Reserves 1 and 2 (California) (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Management & Administration	Provided required management of operations: planning and analytic support: implementation of financial systems; auditing; procurement; ADP; human resources and operator fee.	Provide required management of operations: planning and analytic support: financial systems; auditing; procurement; ADP: human resources and operator fee. Increase is due to purchase of engineering workstations, software, and array processor for modeling and simulation.	Provide required management of operations; planning and analytic support: financial systems; auditing; procurement; ADP; human resources and operator feb. Decrease is due to purchase of engineering ADP equipment and software in FY 1990.
	$ 25,600	$ 27,000	$ 26,000
Technical Services	Provided required technical support for production, reservoir and geological engineering: facilities and systems engineering: safety: environment; security and quality assurance: and endangered species and hazardous waste compliance. Continued work on environmental impact statement and completed reserve estimate study.	Provide required technical support for production, reservoir and geological engineering: facilities and systems engineering: safety: environment; security and quality assurance: and endangered species and hazardous waste compliance. Complete expanded environmental impact statement. Increase is due to geological and petro- physical analyses, reservoir studies and engineering support.	Provide required technical support for production, reservoir and geological engineering: facilities and systems engineering: safety: environment; security and quality assurance: and endangered species and hazardous waste compliance. Increase is due to additional facility engineering requirements for repair projects.
	$ 21,200	$ 23,700	$ 25,500
Subtotal, Operations & Maintenance	$ 115,416	$ 131,171	$ 140,100
Development Drilling	Continued SOZ and Stevens drilling programs. Drilled 20 wells consisting of 7 SOZ wells and 13 Stevens wells.	Continue SOZ and Stevens drilling programs. Drill 28 wells consisting of 14 SOZ wells (steamflood expansion) and 14 Stevens wells.	Continue SOZ and Stevens drilling programs. Drill 26 wells consisting of 6 SOZ wells and 20 Stevens wells.
	$ 19,000	$ 11,009	$ 17,500

FY 1991 Drilling Program

Zone	No. of Wells	Avg. Cost 1/	Total Cost 2/	Avg. Production
Shallow Oil	6	$ 337	$ 2,021	100 BOPD/Well
Stevens	20	$ 812	$ 16,247	220 BOPD/Well
	26		$ 18,268	

1/ Off due to rounding.

2/ Total cost includes use of prior year uncosted obligations.

III. Reserves 1 and 2 (California) (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Exploratory Drilling	Conducted extensive well tests on the deep test well and 3 deep Stevens wells. $ 4,000	Continue well testing program and conduct seismic reprocessing program. $ 2,493	Complete testing program begun in FY 1990. Decreased due to completion of testing program and no new wells planned for drilling. $ 500
Development Facilities	Provided for the construction and/or modification of existing facilities to comply with environmental and safety requirements, ensure continued oil and gas production, and to meet miscellaneous operational requirements. Major projects completed included NOx compliance, increased compression capacity for the Carneros Zone, installation of a Northwest Stevens high pressure pipeline,and 35R gas plant flare relief. $ 23,200	Provide for the construction and/or modification of existing facilities to comply with environmental and safety requirements, ensure continued oil and gas production, and to meet miscellaneous operational requirements. Increase due to requirements for pipeline repair and corrosion mitigation, steamflood expansion, and waterflood expansion. $ 33,017	Provide for the construction and/or modification of existing facilities to comply with environmental and safety requirements, ensure continued oil and gas production, and to meet miscellaneous operational requirements. Decrease due to no anticipated miscellaneous safety and production projects, reduction in capital equipment requirements, and less design and construction costs for the Kern County Rule 427 compliance project. Major projects include pipeline repair, artificial lift, compressor optimization, 35R gas plant upgrade, closed loop gas lift, produced water injection and environmental compliance. $ 27,000
Production	Produced an average of 96,800 BOPD, 369 MMCFPD of natural gas, and processed 434 MGPD of liquid products. $ 0	Produce an estimated 91,700 BOPD, 376 MMCFPD of natural gas, and process 480 MGPD of liquid products. $ 0	Produce an estimated 86,700 BOPD, 389 MMCFPD of natural gas, and process 481 MGPD of liquid products. $ 0
Sales	Sold an average of 75,500 BOPD, 90 MMCFPD of natural gas, and 504 MGPD of liquid products. $ 0	Sell an estimated 71,600 BOPD, 132 MMCFPD of natural gas, and 535 MGPD of liquid products. $ 0	Sell an estimated 67,000 BOPD, 137 MMCFPD of natural gas, and 553 MGPD of liquid products. $ 0
Revenues	Generated accrued revenues of $615 million. $ 0	Generate estimated revenues of $610 million. $ 0	Generate estimated revenues of $600 million. $ 0
Reserves 1 and 2 (California)	$ 161,616	$ 177,600	$ 186,100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY SUMMARY

NAVAL PETROLEUM AND OIL SHALE RESERVES

I. Preface: Reserve 3 (Wyoming)

The objective at NPR-3 is to operate and produce the field at the maximum efficient rate (MER). Funding is required for conventional oil field management and operations and enhanced oil recovery operations within the categories of Operations and Maintenance (O&M), Development Drilling and Development Facilities. O&M provides for the necessary daily activities to produce oil and gas from the Reserve. This includes operation, maintenance and repair of facilities and equipment; engineering support to direct and monitor field development; financial management; administrative support; technical support; purchase of field equipment; and environmental, safety and security support. Development Drilling provides for the wells necessary to develop petroleum reservoirs and achieve MER. The focus of the drilling program is to continue development of known productive formations through infill drilling and exploration of zones beyond known productive areas. Development Facilities provides for the continued implementation of enhanced recovery techniques to produce oil which is otherwise not recoverable.

II. A. Summary Table: Reserve 3 (Wyoming)

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Operations & Maintenance				
Production Operations...........................	$ 10,038	$ 8,962	$ 10,174	+ 14
Management & Technical Support.................	1,332	960	1,087	+ 13
Administrative Support.........................	2,909	2,968	3,048	+ 3
Subtotal, Operations & Maintenance	$ 14,279	$ 12,890	$ 14,309	+ 11
Development Drilling...........................	$ 3,057	$ 2,077	$ 253	- 88
Development Facilities.........................	0	433	3,820	+782
Production.....................................	0	0	0	0
Sales..	0	0	0	0
Revenues.......................................	0	0	0	0
Total, Reserve 3 (Wyoming)	$ 17,336	$ 15,400	$ 18,382	+ 19

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Reserve 3 (Wyoming)			
Operations & Maintenance			
Production Operations	Provided routine O&M activities for production related facilities: petroleum handling facilities; gas collection, processing, and injection facilities; waterflood facilities; well servicing and maintenance; electricity and utility systems; buildings, roads, and grounds; DOE-owned heavy field equipment and motor vehicles; and operation of the EOR steam drive development project.	Provide routine O&M activities for production related facilities; petroleum handling facilities; gas collection, processing, and injection facilities; waterflood facilities; well servicing and maintenance; electricity and utility systems; buildings, roads, and grounds; DOE-owned heavy field equipment and motor vehicles; and continued operation of the EOR steam drive development project. Decrease is due to a reduction in the rate of EOR implementation to maintain profitable operations.	Provide routine O&M activities for production related facilities; petroleum handling facilities; gas collection, processing, and injection facilities; waterflood facilities; well servicing and maintenance; electricity and utility systems; buildings, roads, and grounds; DOE-owned heavy field equipment and motor vehicles; and continued operation of the EOR steam drive development project. Increase is due to an additional steam generator in operation.
	$ 10,038	$ 8,962	$ 10,174
Management & Technical Support	Provided required managerial and technical support for field operations including: overall management of the field; scheduling and planning; quality assurance; petroleum geology; production engineering; facilities and construction engineering; and reservoir studies.	Provide required managerial and technical support for field operations including: overall management of the field; scheduling and planning; quality assurance; petroleum geology; production engineering; facilities and construction engineering; and reservoir studies. Decrease due to reduced reservoir engineering requirements allowing for elimination of the reservoir engineering section.	Provide required managerial and technical support for field operations including: overall management of the field; scheduling and planning; quality assurance; petroleum geology; production engineering; facilities and construction engineering; and reservoir studies.
	$ 1,332	$ 960	$ 1,087
Administrative Support	Provided required administrative support functions including financial management, ADP, procurement, security, safety, environmental protection, and operator fee.	Provide required administrative support functions including financial management, ADP, procurement, security, safety, environmental protection, and operator fee.	Provide required administrative support functions including financial management, ADP, procurement, security, safety, environmental protection, and operator fee.
	$ 2,909	$ 2,968	$ 3,048

III. Reserve 3 (Wyoming) (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Subtotal, Operations & Maintenance	$ 14,279	$ 12,090	$ 14,309
Development Drilling	Drilled 10 Shannon/Shale wells in areas not amenable to EOR and 5 Shale wells. Installed flowlines and electrical connections. Drilling program reduced to maintain profitability.	Drill 30 Shannon infill/Shale wells in areas not amenable to EOR, 3 Second Wall Creek wells, and 15 Shale wells. Install flowlines and electrical connections. Decrease due to lower well cost estimates based on purchase of DOE rig.	Drill 5 Shannon infill/Shale wells in areas not amenable to EOR. Install flowlines and electrical connections. Average production is estimated at 7 BOPD per well. Decrease due to less wells planned for drilling.
	$ 3,057	$ 2,077	$ 253
Development Facilities	Continued expansion of steam drive development project with use of prior year funds. Completed installation of steam generator #2 and tank battery modifications.	Continue to implement steam drive development project. Install generator #3 with use of prior year funds and purchase generator #4. Increase due to purchase of fourth steam generator.	Continue to implement steam drive development project. Purchase steam generator #5, install generator #4 and related equipment, drill and complete necessary production and injection wells. Provide for ASP EOR pilot project in the Second Wall Creek. Increase is due to installation of the fourth generator and the ASP pilot project.
	$ 0	$ 433	$ 3,820
Production	Produced an average of 2,280 BOPD, 9 MMCFPD of natural gas (for injection only), and process 11 MGPD of liquid products.	Produce an estimated 2,500 BOPD, 8 MMCFPD of natural gas (for injection only), and process 6 MGPD of liquid products.	Produce an estimated 2,600 BOPD, 8 MMCFPD of natural gas (for injection only), and process 6 MGPD of liquid products.
	$ 0	$ 0	$ 0
Sales	Sold an average of 2,280 BOPD and 11 MGPD of liquid products.	Sell an estimated 2,500 BOPD and 6 MGPD of liquid products.	Sell an estimated 2,600 BOPD and 6 MGPD of liquid products.
	$ 0	$ 0	$ 0
Revenues	Generated accrued revenues of $16 million.	Generate an estimated $17 million in revenues.	Generate an estimated $18 million in revenues.
	$ 0	$ 0	$ 0

III. Reserve 3 (Wyoming) (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Reserve 3 (Wyoming)	$ 17,336	$ 15,400	$ 18,382

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY SUMMARY

NAVAL PETROLEUM AND OIL SHALE RESERVES

I. Preface: Naval Oil Shale Reserves, (Colorado & Utah)

The objective of the NOSR program is to protect, maintain and explore the Government's resources at the NOSRs. On-going surface management activities for all NOSRs conducted through the Bureau of Land Management and groundwater monitoring of the spent shale pile at NOSR-3 to mitigate any adverse environmental conditions will continue. Asbestos removal and demolition of the few remaining buildings at NOSR-1 will be performed along with providing for any minor maintenance requirements. Operations and maintenance activities will be conducted for the on-line gas wells. Commercial development adjacent to the NOSRs will continue to be monitored with further implementation of the gas protection plan dependent upon economic conditions and the availability of funds.

II. A. Summary Table: Naval Oil Shale Reserves, (Colorado & Utah)

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Naval Oil Shale Reserves, (Colorado & Utah).....	$ 200	$ 197	$ 408	+107
Total, Naval Oil Shale Reserves, (Colorado & Utah)	$ 200	$ 197	$ 408	+107

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Naval Oil Shale Reserves, (Colorado & Utah)	Conducted activities to protect, conserve and maintain the Government's resources. This included: surface resource management through BLM; environmental and groundwater monitoring; minor maintenance; communitized 8 wells in the Parachute Field ($615 of prior year funds); drilled 8 Government owned offset wells and began to install a gas gathering system in the Parachute Field. installed a gas gathering system for the Rulison wells, and operated and maintained gas wells as they were put into production ($3,670 of prior year funds). Generated revenues of $.1 million.	Conduct activities to protect, conserve and maintain the Government's resources. This includes: surface resource management activities through BLM; continue environmental and groundwater monitoring; provide for minor maintenance requirements; complete a gas gathering system for the Parachute Field offset wells; purchase water rights to the Ruedi Reservoir ($868 of prior year funds); and operate and maintain gas wells ($190 of prior year funds). Produce 2.0 MMCF of natural gas and generate estimated revenues of $3 million.	Conduct activities to protect, conserve and maintain the Government's resources. This includes: surface resource management through BLM; Ruedi Reservoir annual O&M fee; demolition of buildings and asbestos removal at NOSR-1; continue groundwater monitoring; provide for minor maintenance requirements; and operate and maintain all gas wells on-line. Increase is due to environmental clean-up at NOSR-1, and NOSR-3 O&M activities. Produce an estimated 1.3 MMCF of natural gas and generate estimated revenues of $2 million.
	$ 200	$ 197	$ 408
Naval Oil Shale Reserves, (Colorado & Utah)	$ 200	$ 197	$ 408

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NAVAL PETROLEUM AND OIL SHALE RESERVES
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KEY ACTIVITY SUMMARY

NAVAL PETROLEUM AND OIL SHALE RESERVES

I. Preface: Program Direction

This activity provides funding for the FTEs necessary to direct, manage and monitor program operations to ensure that program objectives are achieved in a timely and efficient manner. This includes establishing goals and objectives, developing policy, and monitoring contractor operations. Government support is provided both at Headquarters and on-site, and includes planning, financial management, administrative support, engineering, ADP, procurement, environment and safety.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction....................................	$ 5,919	$ 6,152	$ 6,720	+ 9
Total, Program Direction	$ 5,919	$ 6,152	$ 6,720	+ 9

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provided for Headquarters and on-site management of the Reserves (92 FTEs) in the following areas: policy and planning; petroleum engineering: facilities engineering; financial management; ADP; procurement; personnel; environment and safety; and reservoir engineering studies.	Provide for Headquarters and on-site management of the Reserves (89 FTEs) in the following areas: policy and planning; petroleum engineering; facilities engineering; financial management; ADP; procurement; personnel; and environment and safety.	Provide for Headquarters and on-site management of the Reserves (91 FTEs) in the following areas: policy and planning; petroleum engineering; facilities engineering; financial management; ADP; procurement; personnel; and environment and safety.
	$ 5,919	$ 6,152	$ 6,720
Program Direction	$ 5,919	$ 6,152	$ 6,720

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NAVAL PETROLEUM AND OIL SHALE RESERVES
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KEY ACTIVITY SUMMARY

CONSTRUCTION PROJECTS

Naval Petroleum and Oil Shale Reserves

IV. A. Construction Project Summary

Project Title	Total Prior Year Obligations	FY 1990 Appropriated	FY 1991 Target Request	Remaining Balance	TEC
OPERATING FUNDED					
SAR I - 35R	$ 348	$ 500	$ 540	$ ---	$ 1,388
Fire Protection - New Systems	---	250	210	220	680
Miscellaneous Safety Projects	---	200	210	910	1,320
Tank Setting Liquid Containment	20	100	110	---	230
Waste Water Disposal System	---	1,400	800	2,535	4,735
Kern County Rule 427 Compliance	---	3,200	1,070	5,640	9,910
Miscellaneous Environmental Projects	---	200	210	910	1,320
Produced Water Injection	1,375	2,600	1,550	5,375	10,900
Compressor Optimization Implementation	723	2,000	2,140	9,070	13,933
Stevens Tank Setting Modifications	460	1,000	1,070	4,535	7,065
Pipeline Repair/Replacement - Gas	201	2,840	3,640	17,430	24,111
Pipeline Repair/Replacement - Oil & Water	---	2,000	2,460	10,890	15,350
35R Gas Plant Upgrade	50	1,000	2,140	2,950	6,140
DGZ Program	---	400	960	1,320	2,680
SOZ (SS-2) Waterflood	---	700	300	---	1,000
4G Closed Loop Gas Lift Compressor Installation	---	850	910	---	1,760
24Z/29R Closed Loop Gas Lift	---	2,900	1,710	---	4,610
24Z Waterflood Upgrade	---	---	430	---	430
Artificial Lift	2,607	3,300	3,210	17,435	26,552
Miscellaneous Unscheduled Projects	1,564	2,868	2,780	13,600	20,812
Sales Tax	---	---	550	---	550
Subtotal NPR-1&2	7,348	28,308	27,000	92,820	155,476

IV. A. Construction Project Summary

Project Title	Total Prior Year Obligations	FY 1990 Appropriated	FY 1991 Target Request	Remaining Balance	TEC
Shannon EOR Steam Drive - Generator No. 4	75	433	2,342	---	2,850
Shannon EOR Steam Drive - Generator No. 5	---	---	537	1,779	2,316
ASP EOR Pilot Project	2,170	---	1,016	1,226	4,412
Subtotal NPR-3	2,245	433	3,895	3,005	9,578
Total NPOSR	9,593	28,741	30,895	95,825	165,054

Provision for outyear funding requirements on the following one-page construction project summaries is provided so that parties interested in leasing will have appropriate knowledge regarding current production, development and environmental projects at NPR-1 and 3.

DEPARTMENT OF ENERGY
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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

SAR I - 35R

Reserve No. 1 & 2, California

Project TEC:	**$ 1,388**
Start Date:	**2Q-FY 89**
Completion Date:	**4Q-FY 91**

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** (Budget Authority)	$0	$ 348	$ 500	$ 540	$ 0

3. **Narrative:**

The FY 86 35R Gas Plant SAR identified safety related line items that required corrective action. These discrepancies are enumerated in the 35R Gas Plant SAR report and relate to ASME, OSHA, API, NFPA, California Code of Regulations, good safety engineering practice, etc. The performance period was viewed as the maximum time period under which correction of safety-related items could be completed without imposing undue risk.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Fire Protection - New Systems

Reserve No. 1 & 2, California

Project TEC: $ 680
Start Date: 1Q-FY 90
Completion Date: 4Q-FY 92

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** (Budget Authority)	$ 0	$ 0	$ 250	$ 210	$ 220

3. **Narrative:**

This long term project is to make modifications to existing NPR-1 fire protection systems and provide additional new systems. New systems will be primarily to increase fire protection in and around storage and sales facilities for crude oil and natural gas liquids as well as near compressors. Work will include erection of fire protection barriers between tanks for fire isolation, and installation of deluge systems.

It is anticipated that these funds will be needed to install new systems in conjunction with modifications to existing systems budgeted for in the Operations and Maintenance Fund 111. These modifications are intended to achieve compliance with DOE Orders by the end of FY 92.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Miscellaneous Safety Projects

Reserve No. 1 & 2, California

Project TEC: $ 1,320
Start Date: 1Q-FY 90
Completion Date: 4Q-FY 95

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** (Budget Authority)	$ 0	$ 0	$ 200	$ 210	$ 910

3. **Narrative:**

Safety related projects are anticipated for fiscal years FY 89 through FY 95 as corrective measures for safety deficiencies arising from continued audits and inspections. Areas in which safety deficiencies have previously been identified for correction include insulation requirements for personnel protection, facility lighting upgrades and personnel access over piping at various field facilities (styles). In addition, funding will be required to address anticipated regulatory changes. Examples of such changes include the recent legislation involving asbestos, expansion of the carcinogens listing (non-asbestos fibrous insulation materials), reduction of Threshold Limit Values (TLV's) such as the newly adopted benzene standard, and the development and implementation of a new and more restrictive standard for confined or enclosed space work. It is anticipated that restrictive regulatory trends in a number of other areas will occur. Safety evaluations of NPR-1 facilities should be continued. Corrective actions resulting from these safety evaluations will need to be undertaken when identified, and existing facilities will require upgrading to comply with more restrictive regulations.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Tank Setting Liquid Containment

Reserve No. 1 & 2, California

Project TEC:	$ 230
Start Date:	2Q-FY 89
Completion Date:	4Q-FY 91

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** (Budget Authority)	$ 0	$ 20	$ 100	$ 110	$ 0

3. **Narrative:**

Provide secondary containment for selected storage tanks at NPR-1 to ensure leaks or spills do not leave NPR-1 or cause adverse environmental impact. This will ensure compliance to EPA Oil Spill Regulations, the Endangered Species Act, and Clean Water Act.

DEPARTMENT OF ENERGY
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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Waste Water Disposal System

Reserve No. 1 & 2, California

Project TEC: $ 4,735
Start Date: 1Q-FY 90
Completion Date: 4Q-FY 94

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** (Budget Authority)	$ 0	$ 0	$ 1,400	$ 800	$ 2,535

3. **Narrative:**

This project continues the effort begun in FY 1989 to replace the current waste water disposal system. This is necessary to comply with requirements of the California Regional Water Quality Board (CRWQB), eliminating use of waste water sumps and injection into the Tulare Zone. Measures include a combination of facility modifications to use produced water for waterflood projects, deepening current water disposal wells to an environmentally-acceptable zone, and potentially drilling new disposal wells.

DEPARTMENT OF ENERGY
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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Project TEC:	$ 9,910
Start Date:	1Q-FY 90
Completion Date:	4Q-FY 95

Kern County Rule 427 Compliance

Reserve No. 1 & 2, California

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 3,200	$ 1,070	$ 5,640

3. **Narrative:**

On June 1, 1987, the Kern County Air Pollution Control Board (KCAPCB) adopted Rule 427 - "Emissions from Stationary Internal Combustion Engines" which includes a "trigger" mechanism for the implementation of internal combustion engine NO_x controls in western Kern County. This portion of the rule would become effective only upon a finding by KCAPCB that four or more separate validated exceedances of the ozone National Ambient Air Quality Standards (NAAQS) or 0.12 ppm occurred between January 1, 1988 and December 31, 1990. On March 14, 1989 KCAPCB announced the finding and validation of at least five separate exceedances in western Kern County during October 1988; as a result, a ruling will be made during FY 1989 to invoke Rule 427. The rule will require the following modifications:

- within 15 months of the ruling, rich-burn engines greater than 200 hp must achieve an 80% NO_x reduction or emissions totalling 90 ppm (by volume) on a dry basis, corrected to 15% exhaust oxygen.
- within 15 months of the ruling, lean-burn engines greater than 500 hp must achieve a 70% NO_x reduction or 150 ppm; or 2 grams per brake-horsepower-hour for engines in which new emission controls exclusively affected the combustion process.
- by December 31, 1995, rich-burn and lean-burn engines greater than 50 hp must meet the above standard.

Requirements of this ruling within the initial 15 months apply to approximately 41 engines operating at NPR-1. Additional requirements through December 31, 1995 will affect up to 231 other compressors.

DEPARTMENT OF ENERGY
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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Miscellaneous Environmental Projects

Reserve No. 1 & 2, California

Project TEC:	**$ 1,320**
Start Date:	**1Q-FY 90**
Completion Date:	**4Q-FY 95**

2. **Financial Schedule:**
(Budget Authority)

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 200	$ 210	$ 910

3. **Narrative:**

Projects will involve the NPR-1 actions essential to meet new requirements of environmental legislation and/or rules or regulations for waste, water, air or other environmental areas. The number of environmental regulations is growing at increasing rates, particularly in the state of California. It is anticipated that new legislation will continue to be enacted to establish more stringent controls over emissions and discharges. Additional facilities development projects will be required to achieve compliance with these new regulations. While the exact requirements to be established in future legislation and regulations are not well known at this time, NPR-1 should expect to expend funds at the level indicated for facilities projects needed to achieve environmental compliance.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Project TEC: $ 10,900
Start Date: 1Q-FY 88
Completion Date: 4Q-FY 94

Produced Water Injection

Reserve No. 1 & 2, California

2. **Financial Schedule:**

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
(Budget Authority)	$ 0	$ 1,375	$ 2,600	$ 1,550	$ 5,375

3. **Narrative:**

Produced water (water associated with oil production) has reached significant quantities at NPR-1. Presently a total of 100,000 BWPD is being gathered at two locations: 18G and 24Z. We propose to eliminate duplicate handling of water by selectively replacing Tulare water injection with produced water. This will:

- Achieve operating cost savings.
- Defer expansion of the Tulare water supply system currently operating at maximum capacity.
- Defer expansion of the water disposal system, currently operating at near maximum capacity.

Quantities of produced water are now available to convert portions of the waterflood system from use of Tulare Zone water to produced water. This will offer operating cost savings resulting from water disposal into Tulare water zones. Surface facilities required for the injection of produced water will be provided. These facilities will include produced water lines, water treatment facilities, and other surface facilities. This project will benefit all zones which produce water.

The economic benefit of this project will be a payout period of 10 months, with a NPV of $49.3 million at 10%.

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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Project TEC:	$13,933
Start Date:	1Q-FY 89
Completion Date:	4Q-FY 95

Compressor Optimization Implementation

Reserve No. 1 & 2, California

2. **Financial Schedule:**

(Budget Authority)	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
	$ 0	$ 723	$ 2,000	$ 2,140	$ 9,070

3. **Narrative:**

To accommodate increasing gas production and continue to achieve MER, this project will implement findings of a Compresser Optimization Study completed in FY 88. Also, as production strategies change from year to year, this project will generate specific sub-projects to handle the changing production, including installing new gas gathering pipelines, recylindering and/or relocating existing compressers, installing new compressers, and placing abandoned pipelines in gas gathering service.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. Project Title and Locations:

Stevens Tank Setting Modifications

Reserve No. 1 & 2, California

Project TEC:	$ 7,065
Start Date:	1Q-FY 89
Completion Date:	4Q-FY 95

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. Financial Schedule: (Budget Authority)	$ 0	$ 460	$ 1,000	$ 1,070	$ 4,535

3. Narrative:

Existing tank setting capacities will be expanded to safely and cost-effectively process increased future fluid production. Modifications will include increasing the liquid and/or gas capacities of test separators, pool separators, scrubbers and transfer pumps, as well as upgrading interconnecting piping and instrumentation. The necessary modifications will be made to tank settings to provide capacity to accommodate increased production requirements.

DEPARTMENT OF ENERGY
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NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**	**Project TEC:**	**$ 24,111**
Pipeline Repair/Replacement - Gas	**Start Date:**	**4Q-FY 90**
Reserve No. 1 & 2, California	**Completion Date:**	**4Q-FY 95**

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule: (Budget Authority)**	$ 0	$ 201	$ 2,840	$ 3,640	$ 17,430

3. **Narrative:**

This project will provide for the repair and replacement of sections of pipe in the various gas gathering and distribution systems on NPR-1. Repair and replacement of sections of the various gathering and distribution systems are required each year to (1) ensure safety, (2) protect the environment and wildlife and (3) to maintain or increase production. Much of the piping was installed over 30 years ago. Over the years, corrosion has occurred at various rates and, in a number of cases, has required pipeline repairs and replacements. Chemical testing of the Stevens and DGZ Gas Gathering Systems indicates the presence of carbon dioxide, oxygen and hydrogen sulfide in the Stevens System and carbon dioxide and hydrogen sulfide in the DGZ System. The synergistic effect of these corrodents is manifested by the rapid deterioration of the Northwest R High Pressure gas pipeline whose serviceable lifetime was 8 years, and the DGZ pipeline (near the 27R Disposal Site) whose serviceable lifetime was 2 years.

Further, gas analysis of Stevens Zone gas indicates relatively high partial pressures of carbon dioxide which will negatively impact this gathering system. In the high pressure system, the partial pressure of CO_2 has been in excess of 10 psi (>2 mol %). This corresponds to a pH of approximately 4 (carbonic acid). Large amounts of oxygen have also been detected in the Stevens System. Oxygen concentrations as high as 1800 ppm have been detected downstream of compressor discharges. In addition, tests for hydrogen sulfide have yielded concentrations as high as 13 ppm in the HP gas. Serial dilutions for corrosion-inducing bacteria have yielded 105 - 106 colonies/ml in less than one week incubation, indicating additional corrosion potential. The scope of this project is based on historical data and operating experience at NPR-1, in which individual emergency repairs to the gas pipeline system have exceeded $1 million.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Project TEC:	$ 15,350
Start Date:	4Q-FY 90
Completion Date:	4Q-FY 95

1. **Project Title and Locations:**

Pipeline Repair/Replacement - Oil and Water

Reserve No. 1 & 2, California

		Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2.	Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 2,000	$ 2,460	$ 10,890

3. **Narrative:**

This project will provide funds for the repair and replacement of sections of pipeline in various oil and water gathering and distribution systems on the Reserve. Repair and replacement of sections of the various gathering and distribution systems are required each year to (1) ensure safety, (2) protect the environment and wildlife and (3) to maintain or increase production. Much of the piping was installed over 30 years ago. Over the years, corrosion has occurred at various rates and has required numerous pipeline repairs and replacements. The on-going corrosion detection program which was initiated on the gas pipeline systems (see Pipeline Repair/Replacement - Gas) will be extended to include the oil and water systems. Based on historical data and operating experience, it is anticipated that an increase in replacement requirements will be identified. Without this project, emergency repairs will have to be made, at the same or greater cost, causing deferral of other needed work.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Project TEC: $ 6,140
Start Date: 4Q-FY 89
Completion Date: 3Q-FY 92

35R Gas Plant Upgrade

Reserve No. 1 & 2, California

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. Financial Schedule: (Budget Authority)	$ 0	$ 50	$ 1,000	$ 2,140	$ 2,950

3. **Narrative:**

This project will install facilities to lower the hydrocarbon and water dew points of processed gas at the 35R Lean Oil Absorption Plant (LOAP) to provide gas of sales quality. Major units required would include a skid mounted refrigeration system, a gas to gas heat exchanger, a gas chiller, separator and a gas glycol dehydrator. Currently the 35R Plant residue gas must be injected because the hydrocarbon dew point of the gas does not meet sales gas specifications. Additionally, the water dew point may exceed sales gas specifications when plant throughput exceeds 70 MMSCFD. A study will start in the 4th quarter of the FY 89 pending receipt of specific scope items from the Owners.

The payout period for the project is 4 months with a NPV of $211.0 million at 10%.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Project TEC: $ 2,680
Start Date: 1Q-FY 90
Completion Date: 4Q-FY 92

1. **Project Title and Locations:**

   DGZ Program

   Reserve No. 1 & 2, California

2. **Financial Schedule:**
   (Budget Authority)

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 400	$ 960	$ 1,320

3. **Narrative:**

   This project will supply gas to the existing Dry Gas Zone (DGZ) compressors at the current design level of 18 MMSCFD and 100 psi inlet pressure. Production is gathered at the 36R Compressor Station for compression and dehydration. The compressors are designed for 100 psi suction pressure and 400 psi discharge pressure. A booster compressor will be installed to compensate for reservoir pressure decline so that the existing compressors will operate at a constant volume and constant pressure. In addition, a study of the existing equipment will include evaluation of an evaporative cooling system for the compressor discharge gas.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Project TEC:	$ 1,000
Start Date:	1Q-FY 90
Completion Date:	1Q-FY 91

SOZ (SS-2) Waterflood

Reserve No. 1 & 2, California

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 700	$ 300	$ 0

3. **Narrative:**

This project is to install facilities for an SS-2/Mulunia Waterflood to inject SOZ produced water into downdip SOZ Sands to increase oil recovery by 2 million barrels. This waterflood activity will be incorporated with overall waste water disposal alternates to Tulare water disposal. The payout period for this project is expected to be less than 1-year, with a net present value of $7 million, discounted at 10%.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

4G Closed Loop Gas Lift Compressor Installation

Reserve No. 1 & 2, California

Project TEC: $ 1,760
Start Date: 1Q-FY 91
Completion Date: 4Q-FY 91

2.		Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2.	**Financial Schedule: (Budget Authority)**	$ 0	$ 0	$ 850	$ 910	$ 0

3. **Narrative:**

This project provides for a fourth 1750 horsepower, electric motor driven compressor to provide for additional requirements at the 4G Closed Loop Gas Lift system. A total of 11 additional gas lift wells are planned for the Main Body B reservoir, increasing the required capacity to 32 MMSCFD through 1995. The current nominal capacity is 22.5 MMSCFD leaving a shortfall of about 9.5 MMSCFD. The project will include upgrading of the existing substation switchgear and an additional transformer. The existing station was planned for the possible installation of a fourth compressor so additional work will be limited to foundations. Piping stub-outs are already provided.

The payout for the project is less than 1 month with a NPV of $400 million at 10%.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

24Z/29R Closed Loop Gas Lift

Reserve No. 1 & 2, California

Project TEC: $ 4,610
Start Date: 1Q-FY 91
Completion Date: 4Q-FY 91

2. **Financial Schedule:**

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
(Budget Authority)	$ 0	$ 0	$ 2,900	$ 1,710	$ 0

3. **Narrative:**

This project provides for a closed loop gas lift system to serve the 24Z/29R Reservoir. There are presently 14 gas lift wells utilizing lift gas from the 3000 psig HPI distribution system; an additional 19 installations are planned. The total supply gas requirement is estimated to be 26 MMSCFD. This volume will impose additional burdens on the existing field gas handling and compression capacity. These wells should be included in a closed loop gas lift system designed to operate at 1500 psig thus reducing field operating expense and the transportation cost associated with the high pressure (450 psig) gas collection system connected to the 35R complex. The work will include four 1750 horsepower, electric motor driven compressors, an electric power substation, a glycol dehydration system, and associated facilities.

This project is estimated to have a NPV of $80 million.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Project TEC: $ 430
Start Date: 1Q-FY 91
Completion Date: 4Q-FY 91

1. **Project Title and Locations:**

24Z Waterflood Upgrade
Increase Tulare Water Capacity

Reserve No. 1 & 2, California

		Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2.	Financial Schedule: (Budget Authority)	$ 0	$ 0	$ 0	$ 430	$ 0

3. **Narrative:**

This project is to increase injection capacity at the 17R Injection Plant by the addition of a new pump train to upgrade facilities associated with the 24Z Waterflood, since the current plant is operating at full capacity with no provisions for maintenance or increased injection rates. This situation impacts the reliability, safety, and efficiency of waterflood operations. The current system was installed by construction of a pipeline and distribution system extending from the southwest leg of the 17R Injection Plant to 13 injection wells located in Sections 18R, 19R, 13Z and 24Z. This project is for construction of additional pump capacity at the 17R Injection Plant, a new Tulare water source well in Section 8R, and pipeline between the new source well and the 17R Injection Plant.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**

Artificial Lift

Reserve No. 1 & 2, California

Project TEC: $ 26,552
Start Date: 1Q-FY 89
Completion Date: 4Q-FY 95

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule:** **(Budget Authority)**	$ *	$ 2,607	$ 3,300	$ 3,210	$ 17,435

3. **Narrative:**

Several Stevens Zone Reservoirs (MBB/W31S, 24Z, NWS (A4-A6), are currently under waterflood. Other waterflood projects are being planned for other reservoirs such as the 2B Sands. As these reservoirs respond to the waterflood projects, the affected wells will require artificial lift systems to continue production. In addition, several reservoirs (31S C/D Shales, 29R Shales, etc.) are experiencing declining pressures and will need artificial lift installations to sustain production. The primary artificial lift systems planned for installation are rod pumping units with their related equipment, including a rod pump, rods, beam pumping unit, gas or electric prime mover, concrete pad, etc. For high volume wells, installation of electric submersible pumps is planned. Electrical submersible pump installation and/or replacement is also required for the Tulare source wells. The closed loop gas lift systems planned for the 4G and 29R/24Z areas will require ancillary artificial lift equipment including lift gas supply lines, metering and control equipment, and downhole mandrels and valves.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

1. **Project Title and Locations:**	**Project TEC:**	$ 20,812
	Start Date:	*
Miscellaneous Unscheduled Projects	**Completion Date:**	*
Reserve No. 1 & 2, California		

	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
2. **Financial Schedule: (Budget Authority)**	$ *	$ 1,564	$ 2,868	$ 2,780	$ 13,600

3. **Narrative:**

Additions, modifications and repairs to facilities are required each year due to unplanned occurrences to (1) ensure safety, (2) protect the environment and wildlife, (3) maintain or increase production, or (4) lower operating costs. Because these projects result from unplanned occurrences, they cannot be defined but they can be anticipated. Deficiencies and problems are identified by operating personnel and others during inspections or by changes in production or injection rates which require modifications or additions to facilities to maintain or increase production or lower operating costs. Certain safety deficiencies and problems which are identified during inspections, audits and appraisals must be expeditiously corrected through operational, maintenance or engineering methods. In addition, future legislation and regulations will probably establish additional requirements for the NPR-1 safety program. New environmental legislation will continue to be passed to establish tighter control over emissions and discharges. Additional facilities development projects will be required to achieve compliance with these new regulations. Additional funds have been provided in FY 94 and FY 95 to allow for projects which will be identified prior to those years. While the exact requirements for unplanned occurrences cannot be defined at this time, NPR-1 should expect to expend funds at the level indicated.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Project TEC:	$2,850
Start Date:	4Q FY 1989
Completion Date:	2Q FY 1991

A. Project Title and Location: Shannon EOR Steam Drive Project - Generator No. 4 at NPR-3

Reserve No. 3

B. Finance Schedule

(Budget Authority)	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	Remaining To Complete
	$75	$0	$433	$2,342	$0

C. Narrative:

The Shannon Reservoir is a shallow, low-pressure, homogeneous formation estimated to have originally contained 144 million barrels of oil. It has been projected that 6.05% of the initial oil in place will be recovered by primary means, thus leaving 135 million barrels of oil in the reservoir. This 135 MMSTB has been the focal point for the EOR testing program established in the late 1970s. In total, three small EOR pilot projects, in situ combustion pilot project, polymer improved waterflood pilot project, and steam drive project (in operation) and one small secondary recovery pilot project, natural gas injection project, have been implemented since 1980.

The steam drive process has the greatest potential for technical and economic success in the Shannon, based on the performance of the 20-acre steam drive project currently in operation and the results of the other pilot projects. The effective exploitable resource for steam drive is much larger than for other processes in the Shannon. The EOR target was 11.3 MMSTB for the in situ combustion process but is 48.3 MMSTB for the steam drive process. Incremental oil production of 11 to 15 MMSTB is considered probable if the steam drive process is fully implemented, as opposed to incremental oil production of 3-5 MMSTB for the in situ combustion process.

If continued success is experienced, continued development of the process would require only two more new 20 MMBTU/hr steam generators plus the three existing or in construction 20 MMBTU/hr generators over the projected 25-year life of the project. All five generators would be located at different locations and permanently installed. As older well patterns begin to deplete, new patterns will be made ready by simply drilling new production/injection and installing a new segment of injection flowline.

Economic justification for the total project is based on discounted cash flow analysis including numerous sensitivity studies. The most probable net present value at a discount rate of 10% expected is $57 million. New reserves recovered through the life of this project are expected to be 11 MMSTB to 15 MMSTB.

Obligations of $0.433 million in FY 1990 includes the design and purchase of Steam Generator No. 4 and associated water treatment facility and installation of that generator and water treatment facility and associated injection/production system, including 10 injection and 12 production wells, in FY 1991 for $2,342.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

A. **Project Title and Location:** Shannon EOR Steam Drive Project - Generator No. 5 at NPR-3 Reserve No. 3	**Project TEC:** $2,316 **Start Date:** 4 Q FY 1991 **Completion Date:** 2 Q FY 1992

B. **Finance Schedule**

(Budget Authority)	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	Remaining To Complete
	$0	$0	$0	$537	$1,779

C. **Narrative:**

The Shannon Reservoir is a shallow, low-pressure, heterogeneous formation estimated to have originally contained 144 million barrels of oil. It has been projected that 6.25% of the initial oil in place will be recovered by primary means, thus leaving 135 million barrels of oil in the reservoir. This 135 MMSTB has been the focal point for the EOR testing program established in the late 1970s. In total, three small EOR pilot projects, in situ combustion pilot project, polymer improved waterflood pilot project, and steam drive project (in operation) and one small secondary recovery pilot project, natural gas injection project, have been implemented since 1980.

The steam drive process has the greatest potential for technical and economic success in the Shannon, based on the performance of the 20-acre steam drive project currently in operation and the results of the other pilot projects. The effective exploitable resource for steam drive is much larger than for other processes in the Shannon. The EOR target is 11.3 MMSTB for the in situ combustion process but is 48.5 MMSTB for the steam drive process. Incremental oil production of 11 to 15 MMSTB is considered probable if the steam drive process is fully implemented, as opposed to incremental oil production of 3-5 MMSTB for the in situ combustion process.

If continued success is experienced, continued development of the process would require only one more new 50 MMBTU/hr steam generator (this generator) plus the four existing or in construction 50 MMBTU/hr generators over the projected 25-year life of the project. All five generators would be located at different locations and permanently installed. As older well patterns begin to deplete, new patterns will be made ready by simply drilling new producers/injectors and installing a new segment of injection flowline.

Economic justification for the total project is based on discounted cash flow analysis including numerous sensitivity studies. The most probable net present value at a discount rate of 10% expected is $57 million. New reserves recovered through the life of this project are expected to be 11 MMSTB to 15 MMSTB.

Obligations of $0.537 million in FY 1991 includes the design and purchase of Steam Generator No. 5 and installation of that generator and associated injection/production system, including 10 injection and 12 production wells, in FY 1992 for $1,779.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

Project Title and Location: Alkaline-Surfactant-Polymer EOR Pilot Study
Reserve No. 3

Project TEC: $4,412
Start Date: 4 Q FY 1989
Completion Date: 2 Q FY 1994

B. Finance Schedule (Budget Authority)	Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	Remaining To Complete
	$2,170	$0	$0	$1,016	$1,226

C. Narrative:

The primary purpose of this Research Study is to expand the Petroleum industry's understanding of a new generation chemical EOR process intended to improve oil recovery in reservoirs utilizing a laboratory designed mixture of alkaline, surfactant, and polymer (referred to as the ASP process) agents.

Specific objectives being pursued include the following:

- Fine tuning criteria for properly screening a reservoir for ASP application.
- Developing laboratory techniques and procedures for designing the optimum ASP chemical system.
- Implementing an ASP pilot project to validate the process under actual field conditions.

The ASP process is intriguing from the aspect that incremental oil can be mobilized and displaced with the efficiency of a surfactant flood but at a fraction of the surfactant chemical slug cost. This is especially attractive in today's volatile energy market characterized by low oil prices.

Interest in the ASP process is real; however, few have been willing or able to commit the resources necessary to advance the technology. Chevron has researched this concept and has concluded that in the lab, the claims that "...chemical flooding methods realize the most significant gains in ultimate recovery from advanced technology..."[1]. Others have gone one step further and have implemented field tests. Terra Resources' four well ASP project in the West Kiehl Field, Crook County, Wyoming; Dome Petroleum's project in the David Field, Alberta, Canada; and Shell's White Castle Field project, Iberville Parish, Louisiana, are all testaments to this endeavor. These isolated applications are evidence that others feel the ASP concept is worthy of testing. However, more testing is required. Thus the ASP Pilot Study.

The focal point of investigation is the Northern Second Wall Creek Reservoir of NPR-3. This reservoir is characterized as a heterogeneous, fractured and faulted sandstone formation possessing relatively fresh in situ waters and has been under an active secondary recovery program since the late 1970's and is prime for some type of tertiary application. ASP screening has resulted in the design of a chemical system that reduces residual oil saturation after waterflooding in radial core floods from 25% to 9%. Additional reservoir characterization performed has identified the pilot project area within a potential ASP resource base area encompassing 1189 acres or a potential 7 million bbls of recoverable oil utilizing this process.

The overall project effort, including pilot project, will encompass a five year span which commenced with the final design of the chemical slug system and the initial construction of the pilot facilities in late FY-89. Construction and drilling will be completed during the first quarter of FY-90 with injection planned for the second quarter. Injection of the chemical slug will take approximately three years to complete with performance monitoring an ongoing concern.

Capital expenditures (including final chemical slug system design) of almost $2.0 million will be required in FY-90. The cost of the chemical slug to be injected is estimated at $1,023,647 to be incurred over a three year period commencing in FY-91. Operating expenses are estimated to average $218,000 (FY 1990 dollars)per year commencing in FY-91. Since the operations at Teapot Dome will potentially gain from the implementation of this research endeavor, engineering and field support other than that described above will be absorbed within the existing NPR-3 budgetary framework.

As a research oriented project, many unknowns exist which make economic questions difficult to adequately address. It is possible to create a scenario whereby even this pilot project would be projected as a money maker, but that is not the prudent approach to take. The benefits, however, are potentially tremendous in that the service and leadership to Industry could be immeasurable. A well designed ASP pilot program that is properly evaluated and integrated with results from other similar endeavors, would undoubtedly direct the focus of future chemical EOR technologies.

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[1] National Petroleum Council, *Enhanced Oil Recovery*, United States Department of Energy, 1984

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
NAVAL PETROLEUM AND OIL SHALE RESERVES
(obligations in thousands of dollars)

OBJECT CLASS

Naval Petroleum and Oil Shale Reserves

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent............	3,752	4,257	4,443
11.3 Other than full-time...........	49	32	35
11.5 Other compensation.............	41	71	74
11.8 Special personnel services.....	350	355	362
11.9 Total personnel compensation...	4,192	4,715	4,914
12.1 Benefits.......................	630	648	705
21.0 Travel.........................	265	257	361
22.0 Transportation of Things.......	14	29	58
23.1 Rental payments to GSA.........	15	10	10
23.3 Communications, utilities and other rent...............	---	15	16
24.0 Printing.......................	1	4	4
25.0 Other services.................	171,740	200,606	204,502
26.0 Supplies and materials.........	254	35	40
31.0 Equipment......................	10	---	---
99.0 Total obligations..............	177,121	206,319	210,610

VOLUME 5

STRATEGIC PETROLEUM RESERVE

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

PROPOSED APPROPRIATION LANGUAGE

For expenses necessary to carry out the provisions of sections 151 through 166 of the Energy Policy and Conservation Act of 1975 (Public Law 94-163), [$194,999,000] $195,633,000 to remain available until expended.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
SPR PETROLEUM ACCOUNT

PROPOSED APPROPRIATION LANGUAGE

For the acquisition and transportation of petroleum and for other necessary expenses under section 167 of the Energy Policy and Conservation Act of 1975 (Public Law 94-163), as amended by the Omnibus Budget Reconciliation Act of 1981 (Public Law 97-35), [$227,820,000] $119,935,000 to remain available until expended: Provided, That additional [$108,458,000] $90,860,000 shall be made available until expended beginning October 1, [1990] 1991: Provided further, That notwithstanding 42 U.S.C. 6240(d) the United States' share of crude oil in Naval Petroleum Reserve Numbered 1 (Elk Hills) may be sold or otherwise disposed of to other than the Strategic Petroleum Reserve.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE

OVERVIEW

STRATEGIC PETROLEUM RESERVE

The Strategic Petroleum Reserve (SPR) was created to provide the United States with adequate strategic and economic protection against oil supply disruptions, by storing up to 1 billion barrels of petroleum products.

The SPR plan as amended and approved by the Congress provides for the storage of 750 million barrels of crude oil in large underground salt caverns at sites located in the Gulf Coast area and connected to major private sector distribution systems.

At the end of FY 1989, all major surface construction for a 750 million barrel storage system was essentially complete and the total capacity available for oil storage was 600 million barrels.

The SPR was filled at an average daily rate of 62,000 barrels a day in FY 1989 and the inventory of crude in storage was approximately 577 million barrels.

Current Administration policy is to continue toward achieving a 750 million-barrel SPR in a fiscally responsible manner.

The Department's FY 1991 request supports this policy in the following manner:

-- To achieve 627 million barrels of storage capacity by the end of FY 1990 and a full 750 million barrels of capacity by the end of FY 1991.

-- Continued implementation of capital improvements projects to upgrade fire safety, site security, and systems reliability.

-- Continued implementation of the ongoing program to increase SPR distribution capability to 4.5 million barrels.

-- Use of the Administration's current assumptions about oil prices.

-- Compliance with the constraint on FY 1990 outlays for oil acquisition and transportation prescribed in Public Law 101-164.

-- Oil fill in FY 1990 at an average rate of approximately 39,000 barrels, increasing the inventory of crude oil in storage to 591 million barrels.

-- Oil fill in FY 1991 of an average rate of approximately 59,000 barrels a day, further increasing the inventory level to 613 million barrels. FY 1991 budgetary resources to achieve this additional fill include funds that will not be utilized in FY 1990 due to the constraint on FY 1990 outlays and estimated FY 1990 excess receipts of the Naval Petroleum Reserves, as defined in Public Law 101-121.

-- A proposed advance FY 1992 appropriation to provide for oil fill during the first quarter of FY 1992 at an average rate of 50,000 barrels a day.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
(dollars in thousands)

LEAD TABLE

Strategic Petroleum Reserve

Activity	FY 1989 Actual	FY 1990 1/ Appropriation	FY 1991 Base	FY 1991 Request	Program Change Request v. Base Dollar	Program Change Request v. Base Percent
Strategic Petroleum Reserve Account:						
Storage Facilities Development and Operations Non-phase Specific........	$160,021	$179,530	$179,530	$182,719	$+ 3,189	+ 2
Management....................	13,400	12,953	12,953	12,914	- 39	0
Total, Strategic Petroleum Reserve Account..............	$173,421	$192,483	$192,483	$195,633	$+ 3,150	+ 2
SPR Petroleum Account:						
Oil Acquisition and Transportation...............	242,000	435,865 2/	435,865 2/	228,393 3/	-207,472	-48
Total SPR Program.............	$415,421	$628,348	$628,348	$424,026	$-204,322	-33
Staffing (FTEs)...............	140	140	140	148		

1/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments.

2/ Includes estimated $120,000,000 defined as excess FY 1990 receipts of Naval Petroleum Reserves in P.L. 101-121.

3/ Includes advance appropriation of $108,458,000 enacted in the Department of the Interior and Related Agencies Appropriations Act, 1990 (Public Law 101-121).

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
(dollars in thousands)

SUMMARY OF CHANGES

Strategic Petroleum Reserve

FY 1990 Appropriation	$ 628,348
FY 1991 Base	$ 628,348
Storage Facilities Development and Operations	
o Non-phase Specific	
- Operations	
--Increase as a result of the commencement of the repair and replacement of the on-shore portion of the West Hackberry brine disposal line	10,800
--Increase for maintenance	2,878
--Decrease due to advance funding of FY 1991 terminal services requirements	(7,280)
--Increase primarily due to an enhanced recovery plan	2,725
--Miscellaneous increases and decreases	660
- Capital Improvements	
--Decrease due primarily to a reduced backlog of security projects	(3,925)
- Distribution Enhancements	
--Decrease in requirements for established program baseline	(2,669)
Management	
--Increase for salaries and benefits	545
--Decrease due to use of carried over analytic program balances	(584)
Oil Acquisition and Transportation	
--Decrease due to the compound effect of offsetting an estimated indefinite FY 1990 appropriation of $120,000,000 against funding required for oil fill in FY 1991	(240,000)
--Increase due to oil price escalation	32,528
FY 1991 Congressional Budget Request	$424,026

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
(dollars in thousands)

KEY ACTIVITY SUMMARY

STRATEGIC PETROLEUM RESERVE

I. Preface: Storage Facilities Development and Operations and Management

Storage Facilities Development and Operations funds all requirements associated with providing for the storage of crude oil, the capability for placing oil into storage and the capability for drawing down and distributing the oil in the event of an emergency. The currently planned capacity of the Strategic Petroleum Reserve is 750 million barrels (MMB), being developed in three phases. Phase I, completed in 1980, consists of 260 MMB of capacity at five underground storage sites and a Federally-owned marine terminal at St. James, Louisiana. Phase I storage sites include Bryan Mound in Texas, and West Hackberry, Bayou Choctaw, Sulphur Mines and Weeks Island, all in Louisiana. Phase II entails the expansion of the Bryan Mound, West Hackberry and Bayou Choctaw sites to provide an additional 290 MMB of capacity. Phase III involves the expansion of these same three sites by a total of 60 MMB, plus the development of a 160 MMB site at Big Hill, Texas. Approximately 20 MMB of this Big Hill capacity will be utilized in connection with the planned decommissioning of the Phase I Sulphur Mines site. Requirements not directly associated with the facilities for specific phases are funded in the Non-phase Specific category of the Storage Facilities Development and Operations budget.

Management funds all costs of Strategic Petroleum Reserve personnel, administrative expenses related to maintaining the Project Management Office in New Orleans, Louisiana, contract services required to support management, and the technical analysis of program issues.

II. A. Summary Table: Storage Facilities Development and Operations and Management

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Phase II - Expansion Sites..........................	$ 0	$ 0	$ 0	0
Phase III - New Sites..........................	0	0	0	0
Non-phase Specific..........................	160,021	179,530	182,719	+ 2
Management..........................	13,400	12,953	12,914	0
Total, Storage Facilities Development and Operations and Management	$ 173,421	$ 192,483	$ 195,633	+ 2

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oak Ridge National Laboratory	$ 360	$ 365	$ 300	- 18
Sandia National Laboratories	$ 1,738	$ 1,894	$ [illegible]	+ 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Storage Facilities Development and Operations and Management			
Phase II - Expansion Sites	Continued efforts to settle claims and close-out contracts. Funded from prior year appropriations. $ 0	Complete the settlement of claims and the close-out of contracts. Funded from prior year appropriations. $ 0	No Activity $ 0
Phase III - New Sites	Completed the construction of the Big Hill security system (Stage 2B). Commenced Sun Terminal tie-in. Funded from prior year appropriations. $ 0	Complete Sun Terminal tie-in. Funded from prior year appropriations. $ 0	No Activity $ 0
Non-phase Specific	Continued operational readiness maintenance and construction support activities. Continued Bayou Choctaw Cavern 101 leaching. Continued Big Hill leaching program for FY 1991 completion. Continued oil fill at 62 MB/D to a level of approximately 577 MMB. Continued site security program and environmental monitoring. Continued implementation of capital improvements program, major projects included completion of the well-head piping modifications at West Hackberry, security enhancements at four sites, well-head piping modifications and modifications to the raw-water intake system at Bryan Mound, upgrade of emergency generators at various sites, and risk abatement tasks at Weeks Island. Completed construction of Lake Charles pipeline. Commenced design and construction of enhancements to increase Bryan Mound drawdown capability to 1.25 MMB/D. $ 160,021	Continue operational readiness maintenance activities. At Bayou Choctaw, complete Cavern 101 leaching and initiate expansion of Cavern 18. Continue Big Hill leaching program for FY 1991 completion. Continue oil fill at 39 MB/D to a level of approximately 591 MMB. Continue site security program and environmental monitoring. Continue implementation of capital improvements program with currently planned major projects to include perimeter detection security enhancements at four sites, lightning protection at two sites, Weeks Island service shaft and fill hole security enhancements and bulkhead upgrades, and emergency generator upgrades at various sites. Complete construction of enhancements to increase Bryan Mound drawdown capability to 1.25 MMB/D. $ 179,530	Continue operational readiness maintenance activities. Commence repair and replacement of the on-shore section of the West Hackberry brine disposal line with completion in FY 1992. Complete Bayou Choctaw Cavern 18 and Big Hill leaching program. Initiate oil transfer from Sulphur Mines in preparation for decommissioning in FY 1992. Continue oil fill at 59 MB/D to a level of 613 MMB. Continue implementation of capital improvements program with currently planned major projects to include lightning protection at three sites, perimeter detection security enhancements at Bryan Mound, and bulkhead upgrades and backup drawdown system at Weeks Island. Award contract(s) for additional marine distribution capability in the Texoma Complex. $ 182,719

III. Storage Facilities Development and Operations and Management (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Management	Provided analytic support for SPR development, fill and distribution policy decisions. Continued to manage Big Hill construction to completion in FY 1989. Continued support and oversight of M&O contractor and subcontractor activities. Managed ongoing Big Hill and Bayou Choctaw leaching operations. Continued management of capital improvements, distribution enhancements and security programs. Managed procurement and injection of approximately 22 MMB of oil. Continued oil quality assurance management activities. A level of 140 FTE's.	Provide analytic support for SPR development, fill and distribution policy decisions. Continue support and oversight of M&O contractor and subcontractor activities. Manage ongoing Big Hill and Bayou Choctaw leaching operations. Continue management of capital improvements, distribution enhancements and security programs. Manage procurement and injection of approximately 14 MMB of oil. Continue oil quality assurance management activities. A level of 140 FTE's.	Provide analytic support for SPR development, fill and distribution policy decisions. Continue support and oversight of M&O contractor and subcontractor activities. Continue management of capital improvements, distribution enhancements and security programs. Manage the procurement and injection of approximately 22 MMB of oil. Continue oil quality assurance management activities. A level of 140 FTE's.
	$ 13,400	$ 12,953	$ 12,914
Storage Facilities Development and Operations and Management	$ 173,421	$ 192,483	$ 195,633

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
(dollars in thousands)

KEY ACTIVITY SUMMARY

SPR PETROLEUM ACCOUNT

I. Preface: Oil Acquisition and Transportation

The SPR Petroleum Account was established in the Treasury pursuant to the provisions of the Omnibus Budget Reconciliation Act of 1981 (P.L. 97-35). This account funds all Strategic Petroleum Reserve oil procurements, associated transportation costs, U.S. Customs duties, terminal throughput charges and other related miscellaneous costs, such as Defense Fuel Supply Center administration costs associated with acquisition and transportation of oil for the Reserve.

II. A. Summary Table: Oil Acquisition and Transportation

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oil Acquisition and Transportation..............	$ 342,000	$ 435,865	$ 228,393	- 48
Total, Oil Acquisition and Transportation	$ 342,000	$ 435,865	$ 228,393	- 48

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Oil Acquisition and Transportation	Filled the SPR at an average rate of 62 MB/D increasing the inventory to a level of approximately 577 MMB.	Fill the SPR at a rate of 39 MB/D to a level of approximately 591 MMB which reflects compliance with the constraint on FY 1990 outlays for oil acquisition and transportation prescribed in Public Law 101-121.	Fill the SPR at an average rate of approximately 59 MBD, further increasing the inventory level to 613 million barrels. FY 1991 budgetary resources to achieve this fill level include prior year appropriations that will not be utilized in FY 1990 due to the constraint on FY 1990 outlays and estimated FY 1990 excess receipts of $120 million from the Naval Petroleum Reserves, as defined in Public Law 101-121.
	$ 242,000	$ 435,865	$ 228,393
Oil Acquisition and Transportation	$ 242,000	$ 435,865	$ 228,393

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY
(dollars in thousands)

KEY ACTIVITY SUMMARY
CONSTRUCTION PROJECTS

STRATEGIC PETROLEUM RESERVE

IV. A. Construction Project Summary

Project Title	Total Prior Year Obligations	FY 1990 Appropriated	FY 1991 Request	Remaining Balance	TEC
Bryan Mound Drawdown Enhancements	$3,705	$10,707	0	0	$18,409
Texoma Marine Distribution Enhancements	---	$ 5,188	$13,226	$24,657	$46,443
Total, SPR Projects	$3,705	$15,895	$13,226	$24,657	$64,852

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY

(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

STRATEGIC PETROLEUM RESERVE

IV. C. Operating Expense Funded Construction Project

---

1. Project title and location: Requirement for Sustained Drawdown (1.25 MMBPD)
Bryan Mound, TX

Project TEC: $18,409
Start Date: 3Q-FY88
Completion Date: 1Q-FY91

2. Financial schedule
(Budget Authority)

Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
$3,595	$4,107	$10,707	$ 0	0

3. Narrative

This project provides for an increased sustained drawdown capability at the Bryan Mound site from 1.1 million barrels per day to 1.25 million barrels per day. This will allow for increased distribution from the Seaway Group. The proposed modifications are based on achieving a sustained (i.e., average) drawdown flow rate of 1.25 million barrels per day over the duration of the drawdown until 90% of the inventory has been withdrawn. The modifications to the present drawdown system for increasing the Bryan Mound drawdown capability are: 1) Upgrading the existing Raw Water Intake and Injection systems; 2) Integration of the existing site oil tanks for use in a surge capacity for drawdown; 3) Modifications to cavern oil header piping and 4) Addition of a crude oil meter in the present system.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
FOSSIL ENERGY
(dollars in thousands)

KEY ACTIVITY CONSTRUCTION PROJECT SUMMARY

STRATEGIC PETROLEUM RESERVE

IV. C. Operating Expense Funded Construction Project

1. Project title and location:	Texoma Marine Distribution Enhancements Beaumont/Port Arthur, TX/Lake Charles, LA	Project TEC: Start Date: Completion Date:	$46,443 1Q-FY91 4Q-FY93

2. Financial schedule
(Budget Authority)

Prior Year	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request	To Complete
$ 3,372	$ ---	$ 5,188	$13,226	$24,657

3. **Narrative**

In accordance with the Energy Policy and Conservation Act (EPCA) of 1975 and the approved SPR Plan, the SPR will have the capability to store 750 million barrels of crude oil when completed in Fiscal Year 1992, and must have a drawdown/distribution capability of 4.5 million barrels per day. The SPR initiated a distribution enhancement program in 1984 and, to date, enhancements which have been completed or initiated will provide the SPR with a 4.0 million barrel per day distribution capability. Currently planned or proposed enhancements, including this project, will allow the SPR to achieve its planned 4.5 million barrels per day drawdown/distribution capability. Under this project, the SPR's Texoma System will acquire 600,000 barrels per day of marine distribution capability at one or more existing commercial marine terminals capable of providing the required termalling service with minimal modifications. Following the competitive procurement of terminalling services, the Department of Energy will design and construct pipelines connecting the SPR with the commercial terminals.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
STRATEGIC PETROLEUM RESERVE
(Obligations in thousands)

OBJECT CLASS

Strategic Petroleum Reserve

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
11.1 Full time permanent...........	$ 5,934	$ 6,407	$ 6,849
11.3 Other than full time permanent..................	117	128	145
11.5 Other personal compensation.....................	82	109	98
11.9 Total personal compensation.....................	6,133	6,644	7,092
12.1 Personal benefits: Civilian....................	878	1,039	1,136
21.0 Travel and transportation of persons..................	489	571	592
22.0 Transportation of things......	-4	29	30
23.1 Rental payments to GSA........	---	90	93
23.2 Rental payments to others.....	-3	506	1,155
23.3 Communications, utilities, and miscellaneous...........	2,665	11,645	11,391
24.0 Printing and reproduction.....	54	134	161
25.0 Other services................	414,211	517,896	522,255
26.0 Supplies and Materials........	---	20	20
31.0 Equipment.....................	188	1,195	101
99.0 Subtotal......................	$ 424,611	$ 539,769	$ 544,026
Reimbursables.................	--	--	--
Totals........................	$ 424,611	$ 539,769	$ 544,026

VOLUME 5

ENERGY CONSERVATION

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION

PROPOSED APPROPRIATION LANGUAGE

Energy Conservation

For necessary expenses in carrying out energy conservation activities, [$413,262,000] $212,591,000, to remain available until expended, including , notwithstanding any other provision of law, the excess amount for fiscal year [1990] 1991 determined under the provisions of section 3003(d) of Public Law 99-509 (15 U.S.C. 4502): Provided, That $30,000,000 shall be for use in energy conservation programs as defined in section 3008(3) of Public Law 99-509 (15 U.S.C. 4507) and shall not be available until excess amounts are determined under the provisions of section 3003(d) of Public Law 99-509 (15 U.S.C. 4502) [:Provided further, That notwithstanding section 3003(d)(2) of Public Law 99-509 such sums shall be allocated to the eligible programs in the same amounts for each program as in fiscal year 1989: Provided further, That $16,900,000 of the amount provided under this heading shall be available for continuing research and development efforts begun under title II of the Interior and Related Agencies portion of the joint resolution entitled "Joint Resolution making further continuing appropriations for the fiscal year 1986, and for other purposes", approved December 19, 1985 (Public Law 99-190), and implementation of steel and aluminum research authorized by Public Law 100-680: Provided further, That existing facilities, equipment, and supplies, or previously expended research or development funds are not accepted as contributions for the purposes of this appropriation, except as amortized, depreciated, or expensed in normal business practice: Provided further, That the total Federal expenditure under this proviso shall be repaid up to one and one-half times from the proceeds of the commercial sale, lease, manufacture, or use of technologies developed under this proviso, at a rate of one-fourth of all net proceeds]. (Department of the Interior and Related Agencies Appropriations Act, 1990.)

EXPLANATION OF CHANGE

Deletes language applicable only to FY 1990.

DEPARTMENT OF ENERGY

FISCAL YEAR 1991 CONGRESSIONAL BUDGET REQUEST

ENERGY CONSERVATION

VOLUME 5

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION

OVERVIEW

Buildings and Community Systems

The buildings sector uses approximately 28 quads of energy annually. There have been dramatic improvements in energy efficiency in this sector during recent years, but the rate of improvement seems to be slowing, and the sector is growing rapidly. (Energy use increased 1.4 quads from 1987 to 1989). If these trends continue, total consumption will reach 39 quads by 2010. The Buildings and Community Systems (BCS) objective is to hold consumption in 2010 to current levels through a national effort to achieve the maximum, cost-effective energy efficiency. This effort has three components: technology R&D, technology transfer and Congressionally mandated and regulatory program support.

The technology R&D component consists of three subprograms: Building Systems, to support development of more energy efficient building shells; Community Systems, to support development of more efficient "community-level" generation and delivery of energy; and Technology and Consumer Products, to support development of more efficient heating, cooling, lighting, water heating and other building equipment. Since these technology developments will reduce the amount of energy used in providing any desired level of building services, they will help achieve the following national goals, primarily in the mid- and long-term.

- Energy security - by reducing the need for energy imports.
- Health, safety and a clean environment - by accelerating the phase-out of chlorofluorocarbons and reducing the emissions produced in providing building services.
- U.S. competitiveness - since the resulting energy efficient products will be more marketable.

The technology transfer component consists of one subprogram, Technology Transfer and Assessment. It contributes to achievement of the national goals listed above by accelerating/increasing market penetration of the products of technology R&D. It provides a major short-term impact by transferring the results of current development.

Two Congressionally mandated subprograms are conducted: Appliance Standards, to develop test procedures for determining the energy efficiency of major home appliances and, as appropriate, to update legislatively established standards; and the Federal Energy Management Program (FEMP), to coordinate and promote the use of energy savings technologies by Federal agencies. In addition, the Building Systems subprogram is required to develop energy efficiency standards for new commercial and residential buildings. These programs contribute to the goals of a clean environment, energy security and improved U.S. competition by encouraging, and in some cases

forcing, the introduction of energy efficient technologies more rapidly than would occur through the operation of market forces alone. Their impact is primarily in the short-term.

Additionally, as in previous years, this budget supports the performance of beneficial work for others, activities performed on a reimbursable basis, including costs associated with the use of facilities and staff resources.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION
(dollars in thousands)

LEAD TABLE

Buildings and Community Systems

					Program Change Request vs Base	
Activity	FY 1989	FY 1990*	FY 1991 Base	FY 1991 Request	Dollar	Percent
Building Systems	$ 10,899**	$ 10,964**	$ 10,964**	$ 16,690	$ + 5,726	+ 52%
Community Systems	3,060	4,094	4,094	772	- 3,322	- 81%
Technology & Consumer Products	12,243**	14,016**	14,016**	10,674	- 3,342	- 24%
Technology Assessment & Transfer.....	2,150	2,275	2,275	8,050	+ 5,775	+ 254%
Appliance Standards	1,673	1,780	1,780	2,000	+ 220	+ 12%
Federal Energy Management Program ...	1,000	1,187	1,187	3,000	+ 1,813	+ 153%
Program Direction	3,370	3,449	3,449	3,681	+ 232	+ 7%
Capital Equipment	1,210	1,003	1,003	1,100	+ 97	+ 10%
Total	$35,605	$38,768	$38,768	$45,967	$ 7,199	+ 19%
Operating Expenses	(34,395)	(37,765)	(37,765)	(44,867)	+ 7,120	+ 19%
Capital Equipment	(1,210)	(1,003)	(1,003)	(1,100)	+97	+ 10%
Staffing (FTEs)	58	61	61	51		

* FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

** Adjusted to reflect the funding for Solar Buildings activities transferred to Buildings and Community Systems in the FY 1991 budget request.

LEAD TABLE

Buildings and Community Systems (Cont'd)

Authorization:

- P.L. 94-163, Part E (Sec. 381), "Energy Policy and Conservation Act"
- P.L. 94-385, "Energy Conservation and Production Act"
- P.L. 94-438, "Energy Reorganization Act of 1974"
- P.L. 95-618, (Title I), "Energy Tax Act"
- P.L. 95-619, (Sec. 224, Parts 1, 2, 4: Sec. 210-223; and Sec. 501), 541-551; National Energy Conservation Policy Act"
- P.L. 95-620, "Power Plant and Industrial Fuel Use Act of 1978"
- P.L. 96-294, "Energy Security Act"
- P.L. 96-702, "Emergency Energy Conservation Act of 1979"
- P.L. 100-12, "National Appliance Energy Conservation Act of 1987"

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

Buildings and Community Systems

FY 1990 Appropriation	$36,323
Adjustments	+ 2,445*
FY 1991 Base	$38,768
Building Systems	
- Building Materials	- 112
- Building Subsystems	- 397
- Building Subsystems Interaction	+ 1,525
- Existing Buildings Research	+ 502
- Standards and Guidelines	+ 4,208
Community Systems	
- District Heating and Cooling	- 1,344
- Community Energy Systems	- 1,978
Technology and Consumer Products	
- Thermally Activated Heat Pumps	- 2,032
- Advanced Refrigeration Systems	+ 601*
- Combustion and Thermal Distribution	- 989
- Advanced Lighting	- 922

* Reflects transfer of Daylighting and Solar Cooling and Dehumidification activities and the Graham-Rudman-Hollings adjustment.

Technology Transfer and Assessment		
- Technical Evaluation, Analysis and Planning	+	1,529
- Least-Cost Utility Planning/Integrated Resource Planning	+	2,614
- Technology and Information Transfer	+	132
- Acceleration and Near-Term Conservation	+	1,500
Appliance Standards		
- Test Procedures and Consumer Education	+	58
- Appliance Standards Development	+	162
Federal Energy Management		
- Federal Planning, Coordination, Reporting and Evaluation	+	104
- Program Technical Guidance and Assistance	+	1,709
Program Direction	+	232
Capital Equipment	+	97
FY 1991 Congressional Budget Request		$45,967

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Building Systems

The energy required to maintain a comfortable environment within a building is determined by the thermal integrity of the building envelope as well as the efficiency of the equipment that provides heating, cooling and related services. The mission of the Building Systems subprogram is to develop technologies that will improve energy performance of the building envelope; to understand the impact of integrating new materials, components and subsystems as a building system; and to develop innovative tools and techniques to design and construct energy efficient whole buildings. Daylighting research involving electrochromic and holographic glazings and building core daylighting technology, formerly conducted under the Solar Buildings program, will be incorporated into the Fenestration and Daylighting research activities of the Building Systems research program.

The subprogram focuses on research aimed at improving the energy performance of new building envelopes by as much as 80% by 2010. Because of the long life of buildings it is important to improve the thermal integrity of existing buildings as well as new construction. The research also examines the effects of energy efficiency measures on the indoor environment as well as the interaction among subsystems to optimize overall energy efficiency. The subprogram is developing energy conservation standards and guidelines for new residential and commercial buildings that will improve their performance by 20% by the year 1995.

For the near-term, the subprogram is working with industry and codes and standards groups to improve envelope designs for new buildings that will reduce fossil fuel and electrical use by 35%. The existing buildings program is providing information on savings and cost effectiveness of retrofit measures, to facilitate energy conservation decisions by building owners and occupants.

For the mid-term, the subprogram is developing new materials that will replace chlorofluorocarbon (CFC) based materials; developing new envelope subsystems and systems without increasing energy consumption; and working with the U.S. building industry to improve its position relative to foreign competitors.

The long-term efforts are designed to further promote productivity, comfort, health, and safety within buildings; reduce energy consumption in new buildings by 80%; and develop new technologies that will be sought by both foreign and domestic markets.

Private sector and other support for building systems research has been a continuing goal of the program office. Considerable success has been realized in recent years. In FY 1989, direct cost sharing was $960,000 or the equivalent of 11% of the program budget. In-kind support was an additional $1,100,000 or 12% of the program budget. Direct support was provided primarily by State and local governments, utilities, other national agencies, and some private companies, while in-kind support came mostly from industry trade associations, professional organizations, and educational institutions. At the FY 1991 budget request level, it is anticipated that both direct cost sharing and in-kind support will be at least at the FY 1989 levels.

II. A. Summary Table: Building Systems

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Building Materials	$ 867	$ 1,112	$ 1,000	- 10
Building Subsystems	5,928	5,987	5,590	- 7
Building Subsystems Interaction	2,100	2,275	3,800	+ 67
Existing Buildings Research	1,304	798	1,300	+ 63
Standards and Guidelines	700	792	5,000	+531
Total, Building Systems	$ 10,899	$ 10,964	$ 16,690	+ 52

II. B. Major Laboratory and Facility Funding

Chicago Operations Office - Chicago	$ 0	$ 0	$ 200	>999
Lawrence Berkeley National Laboratory	$ 2,725	$ 3,051	$ 3,830	+ 26
Oak Ridge National Laboratory	$ 1,870	$ 1,333	$ 1,533	+ 15
Pacific Northwest Laboratory	$ 700	$ 1,400	$ 4,200	+200

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Building Systems			
Building Materials	Formed industry advisory panels on vapor and air barriers and sealants research. Initiated assessment of laminated composite materials technology. Began development of methodology to assess economic impacts of materials R&D.	Complete methodology to assess economic impacts of materials R&D. Update the insulation fact sheet and release version two of the ZIP personal computer program that provides insulation level guidelines for homes in different locations.	Complete option analyses and publish insulation fact sheet update. Increase industry input to research planning, evaluate impacts of research, and transfer technology to users.
	Developed plan for Federal research on alternatives and substitutes for CFC-containing insulation. Completed and published report on joint public/private workshop on alternatives to insulations containing CFCs. Completed and published report on variable and switchable R-value materials. Initiated a cooperative project with industry for automated fabrication of powder filled panels. Continued development of evacuated panel insulation technology.	Expand joint project with industry Polyisocyanurate Insulation Manufacturers Association (PIMA), Society of Plastics Industry (SPI) and National Roofing Contractors Association (NRCA) for development of non-CFC blown foam insulation to include three blends of two blowing agents. Expand research on vacuum insulation technologies that have the potential of R-20 or more per inch. Initiate	Complete revised plan for Federal research on alternatives and substitutes for CFC-containing insulation. Continue joint projects with industry on development and evaluation of foam insulations blown with alternative blowing agents. Continue the research on vacuum insulation technologies. Extend research and modeling of additives to non-CFC insulation products to reduce energy impacts. Continue research initiative on switchable emittance

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Materials (Cont'd)		research on selective surface and switchable emittance coatings and insulating concrete.	coatings and insulating concrete.
	Completed development of procedure for testing moist insulation. Completed second phase testing of reflective insulations. Initiated development of improved techniques for insulating manufactured homes. Initiated development of model to describe heat transfer characteristics of reflective insulation. (ORNL)	Complete development of reflective insulation heat transfer model. Initiate the development of a standard test procedure for super insulating materials and radiation measurements for selective emittance films and coatings. (ORNL, LBL)	Complete development of a test procedure for the evaluation of switchable emittance coatings and advanced insulation materials. (ORNL,LBL)
	$ 867	$ 1,112	$ 1,000
Building Subsystems	Wall and Foundations Research: Used test results to initiate validation of model for predicting dynamic heat and moisture transfer in walls. Utilizing the National Institute of Standards and Technology (NIST) calibrated hot box, began validation of the model for wall cavities; and began validation of complex thermal bridge calculations.	Continue, at reduced level, NIST validation of heat and moisture transfer models.	Complete NIST/National Research Council Canada coordinated experiments to validate model for predicting dynamic heat and moisture transfer in walls. Continue calibrated hot box tests at NIST to validate complex thermal bridge models. Conduct tests to identify the dynamic thermal and moisture transport properties of complex wall construction.
	Completed thermal anomalies design guide. Initiated first edition guidelines, for mitigation of moisture problems in energy efficient buildings.	Begin assessment of potential of advanced composite wall technology. Continue analysis of multidimensional thermal bridges. Complete preliminary guidelines, for mitigating moisture problems in energy efficient buildings.	Complete assessment of advanced composite wall technology. Conduct research leading to advanced guidelines for mitigation of moisture problems in energy efficient buildings and to revised section of ASHRAE Handbook of Fundamentals.

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems (Cont'd)	Initiated evaluation of different foundation systems to determine their energy performance durability and effect on radon entry. Initiated slab insulation experiments and development of benchmark model for slab insulation. Initiated development and validation of basement and crawl space model addressing moisture and heat transfer for different soil and climate conditions. (ORNL, NIST, U/MN) $700	Publish builder's volume, of foundations handbook. Continue slab insulation experiments. Complete computer model for slab-on-grade insulation. Continue development and validation of basement and crawl space model. (ORNL, NIST, U/MN) $494	Conduct testing and evaluation of foundation systems at ORNL and University of Minnesota test sites. Initiate second edition of the Building Foundation Design Handbook. Develop foundation insulation systems that don't use CFCs. Complete slab insulation experiments. Complete development and validation of basement and crawl space model. (ORNL, NIST, U/MN) $648
	Roof Research: Began operation of the Roof Research Center (RRC) as a DOE-user facility, and solicited industry participation in RRC projects.	Operate and manage the RRC as a DOE-user facility. Adapt the Large Scale Climate Simulator (LSCS) for mechanical testing. Conduct a workshop jointly with industry to address wind uplift testing issues and needed research.	Operate and manage the RRC as a DOE-user facility. Initiate collaborative project with industry on roof mechanical performance.
	Conducted experiments on dynamic cycling of moisture in roofs, condensation under roof membranes, the effects of moisture retarders, and thermal aging of roof insulations. Collected data on light-weight concrete and spray polyurethane foam roofs. Initiated two collaborative test projects with industry: convection effects in loose fill insulations in attics; and performance analysis of non-CFC foam roofing insulations.	Initiate collaborative projects with industry to apply moisture know-how to address major industry problem of reroofing over wet insulation. Complete and disseminate results from tests of light-weight concrete and spray polyurethane roofs. Instrument and calibrate diagnostics platform to begin radiant barrier experiments in attics. Start joint project with industry and Enviornmental Protection Agency (EPA) to develop environmentally safe foam roofing insulation.	Continue collaborative projects on energy efficient reroofing with emphasis on alleviating hazardous waste disposal. Investigate use of radiant barriers and convective heat loss in attics jointly with an industrial partner. Complete and disseminate results of tests on R-value decay due to attic ventilation. Continue the joint project with industry and EPA to develop and characterize performance of new non-CFC foam roofing insulations.
	Developed user-friendly program for thermal analysis of roofs for industry use. Completed work on ASTM infrared roof inspection standard. Continued assessment of probes for roof moisture measurements. Continued to lead IEA Annex on low slope roof systems. (ORNL) $600	Complete and disseminate a user-friendly computer program for analyzing thermal performance of roofs. Develop draft of IEA Annex document on insulated roof systems. (ORNL) $494	Complete and disseminate IEA document on insulated roof systems. (ORNL, NIST) $555

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems (Cont'd)	Windows Research: Continued development of high performance, durable low-E coatings (e.g., diamond-like carbon); initiated development of "superwindow" (low-cost, light-weight, R-7 technology); fostered and provided technical support for industry research on degradation mechanisms affecting long term window performance.	Continue development of advanced window technologies including: superwindow technologies; joint LBL/ORNL advanced commercial envelope initiative; and new materials and processes (e.g., ion-beam deposition).	Continue development of advanced window technologies: superwindows; joint LBL/ORNL advanced commercial envelopes; (e.g., smart curtain walls); and new materials and processes. Continue, with industry support, research on degradation mechanisms affecting long term window performance.
	Provided technology base in window performance to support industry consensus and Federal building standard requirements and design tools. Continued jointly with Canada and ASHRAE, window performance evaluation procedure for simple windows. Continued DOE/ASHRAE solar heat gain methodology project. Initiated Mobile Window Thermal Test (MoWITT) experiments on complex window/shading systems. Continued basic daylighting research.	Under Joint U.S./Canada research project on window performance, develop evaluation procedure for residential windows for window rating system and possible window labeling. Coordinate with industry (National Fenestration Rating Council, ASHRAE), utilities, and State energy offices. Release advanced SUPERLITE daylighting program. Continue MoWITT experiments on complex window/shading systems and basic daylighting research.	Continue technology development in window performance to support industry consensus window labeling requirements. Complete development of window performance evaluation procedure for simple (residential) windows in joint Canada/ASHRAE/DOE project. Complete DOE/ASHRAE heat gain methodology project. Further research required to provide technology for complex (non-residential) window performance evaluation. Continue with cost sharing, MoWITT experiments on the design and validation of models for complex window/shading systems (supporting next phase of joint DOE/Canada/ASHRAE project) and basic daylighting research.
	Continued, with industry cost sharing, development of residential and commercial building design tools, including a fenestration design expert system. (LBL, FSEC, U/MA) $1,500	Continue advanced commercial building window and daylighting design tools. Initiate development of residential design tools to translate thermal and optical properties provided by rating system into solutions for end users (e.g., builders) problems. (LBL, FSEC, U/MA) $1,835	Continue cost sharing effort with industry to develop residential and commercial building design tools. Further research required to support private sector development of more energy efficient windows and improved daylighting concepts. (LBL, FSEC) $1,387

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems (Cont'd)	Daylighting Research: Continued research on nickel oxide electrochromic films, and other materials used in the ion-conducting and counter electrode film layers. Continued research on doped vanadium and other candidate thermochromic optical switching materials. Conducted durability testing of first generation reflective tungsten-based electrochromic optical switching multilayer films.	Establish specific performance criteria for optical switching materials; including optical properties, switching range, and durability for general building applications. Test solid-state thin film coatings employing amorphous and crystalline electrochromagenic materials. Optimize multilayer electrochromagnetic film designs using most promising electrochromic, counter electrode, and electrolyte layers. Determine optical propertise in switched and unswitched states for typical window configurations.	Fabricate and test counter electrode ion-conducting and low resistance transparent conductor materials in laboratory scale tungsten and nickel based electrochromic devices. Analyze performance of monolithic solid-state devices compared with a laminated structure with polymeric layers. Establish accelerated test methods to evaluate long-term optical performance and prototypes for cyclic durability, optical switching and range. As part of IEA Task XII, develop and validate analysis models that integrate advanced glazings capable of controlling solar heat gains while providing visual comfort in buildings.
	Conducted research on scaled-up holographic tracking films and analyze room scale applications.	Complete prototype development of holographic coatings. Test for effective tracking, low chromatic aberration, optical efficiency, and light penetration into building interiors.	Complete testing of optimized holographic coatings which provide more daylight deep in building perimeter zones. Develop architectural concepts and design tools to optimize use of new optical technology in perimeter zones.
	Tested and established performance of prismatic light guide daylighting subsystems.	Investigate integrated light guide/non-mechanical tracking core daylighting systems. Investigate alternative light guides, including fiber optic materials.	Investigate use of holographic and other non-mechanical trackers to replace conventional mechanical trackers for use as core daylighting light collection devices.
	Developed concepts for improving core daylighting in atria using simulation techniques. Conducted by Solar Buildings Program.) $1,735	Investigate innovative concepts for core daylighting. Conduct optical test of full-scale core daylighting subsystem. Investigate innovative optical materials for atrium glazings with light transmittance, low shading coefficient, and seasonal control of transmittance. Develop performance criteria for improved atria daylighting by such means as modified surface coatings and light guides. (Conducted by Solar Buildings Program.) $1,835	Evaluate innovative glazing materials and assemblies for use in atria for increased energy control and improved comfort. In cooperation with industry, field test innovative atrium designs. Continue development of atrium energy performance models. Initiate design of complete core daylighting systems for field tests based on advanced technology. Initiate development of design guidelines for atria with improved thermal performance, daylighting, and comfort. (LBL, EIC, Tufts) $1,400

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems (Cont'd)	Indoor Air Quality, Infiltration and Ventilation (IAQIV): Quantified factors that affect radon entry rates. Completed residential radon mitigation technology research including determination of energy impacts and long-term effectiveness.	Apply "receptor modeling" theory to the analysis of volatile organic compounds in indoor air. Initiate soil gas entry investigation.	Complete soil gas entry experimentation. Continue measurement research and analysis regarding volatile organic compounds (VOCs). Develop passive measurement techniques for polar organics. Additional research required to support industry efforts to improve indoor air quality in energy efficient buildings.
	Performed multiparametric evaluations of advanced ventilation systems for commercial buildings.	Initiate ventilation experimentation in full-scale facilities. Continue long term measurements of air exchange rates in large buildings. Continue macro-modeling effort to address carcinogenic and mutagenic compounds. Use results of large building field studies to develop a protocol for measurement and diagnostic studies.	Complete advanced ventilation experimentation. Continue field studies of commercial buildings. Continue Indoor Air Quality modeling effort. Develop protocol for large building investigations. Further research needed to provide guidance on optimal ventilation in commercial buildings.
	Completed measurements of indoor air quality, infiltration, and ventilation performance in two large office buildings, including measurements of volatile organic compounds. Compared air infiltration techniques, including passive PFT methods. Completed small scale experimentation. Initiated the development of full scale capabilities. (LBL, NIST, BNL, SERI) $1,393	Initiate development of an industry consortium on the laboratory measurement of effective ventilation. Continue collaborative efforts to issue voluntary industry consensus standards related to IAQIV, and continue interagency coordination of indoor air quality research. (LBL, NIST, SERI) $1,304	Develop advanced leakage/infiltration model. Develop industry consortium on laboratory measurement of effective ventilation. Develop macromodeling of the U.S. building stock with regard to indoor air pollution. Continue collaborative efforts to issue voluntary industry consensus standards related to IAQIV. Further research required to provide technology base for guidelines for indoor air pollution evaluation, mitigation, and control by private sector. (LBL, NIST, BNL, SERI) $1,600
	$ 5,988	$ 5,987	$ 5,590

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems Interaction	Published Advanced Energy Design and Operating Technologies (AEDOT) multiyear plan. Developed a computer non-functional prototype to illustrate the AEDOT concept.	Begin AEDOT requirements analysis for building design process, energy design methodologies and computer science technologies. Organize a workshop to present prototype and elicit input from computer aided design (CAD) industry. Establish design process framework and obtain industry input.	Complete AEDOT requirements analysis for building design process. Begin conceptual design of AEDOT intermediate prototype including user interface and energy design advisor expert system.
	Published concept report on the Building Energy Targets energy model. The concept is to identify energy efficiency targets for different building functions in different climate zones. Modified model to allow variable temperatures and ventilation loads. Transferred energy model to a personal computer. Began software engineering for user interface. Began breadboarding of target components.	Complete software engineering for user interface. Initiate development of characteristics selection model. Continue ongoing industry review of products. Initiate test and verification of individual and combined space function range values. (PNL, ASHRAE) $792	Continue test and verification of space function ranges of values and development of characteristics selection model. Continue component development of the targets methodology accounting for visual effects (such as daylighting), internal loads, energy source impacts, envelope and equipment technologies and space functions. Begin work on building cost model. Hold AIA, ASHRAE and IES technical reviews.
	Advanced Commercial Building Systems: Studied the interactive effects on lighting and HVAC loads of varied surface reflectances and pendent mounted luminaires, and the elimination of plenums. Completed sensitivity analysis on driving variables, (e.g., return air path, lighting power density, furnishings and internal loads).	No Activity.	Continue lighting/HVAC interactions study introducing exterior conditions, no plenum installations, high efficiency lamps, and cooling load control strategies. Initiate preparation of design guidelines in cooperation with EPRI, ASHRAE and the Illuminating Engineer Society.
	Studied effects of HVAC/structure mass interactions on cooling loads by integrating conventional water source heat pump HVAC subsystem with a buildings structural mass. Refined computer model.	No Activity.	Develop simulated, climate specific, design guidelines for integrating HVAC and structural mass in buildings. Develop experimental plans for testing HVAC/mass design technology.

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems Interaction (Cont'd)	Complete building systems integration laboratory feasibility study. (FY 1988 funding.) (PNL, ASHRAE, NIST) [illegible]	No Activity.	Initiate planning and development of a building instrumentation and energy monitoring project to perform building system integration field testing in cooperation with industry. Combine and field test HVAC/structure integration concept, and laboratory research findings from the HVAC/lighting interaction project, including effects of daylighting and solar. Address building system diagnostics and optimization of control strategies. (PNL, ASHRAE, NIST) [illegible]
	Industrialized Housing: Initiated research to identify opportunities for energy efficiency in manufactured housing. Developed an experimental plan to evaluate, (1) factory fabrication technologies, (2) to assess materials and methods and (3) to design processes that improve energy efficiency.	Assess current industrialized housing manufacturing procedures. Study advanced and innovative production methods, components and subsystems, and their energy benefits. Identify design decision points that determine energy performance. Hold industry technical reviews.	Test production simulation model. Develop prototype production process for prototype housing system using production simulation system. Develop alternative design/production modules for panelized and modular systems based on U.S. materials and potential production procedures. Select and test a promising, energy conserving, innovative factory produced housing system. Hold industry technical reviews.
	Determined which industrialization techniques have potential to enhance energy performance of end product by energy design strategy and house form.	Develop 21st century industrialized housing system prototype design for one type (panelized and modular) system to field test promising technologies for early industry adoption.	Develop demonstration design and specifications using the housing system prototype. Develop agreement with manufacturer to cooperatively produce, erect, test and demonstrate prototype.
	Evaluated computerized design tools currently used by housing manufacturers to improve energy efficiency. University Oregon (UO), Florida Solar Energy Center (FSEC).	Develop mock-up of prototype computerized tool for the selected housing system prototype that integrates energy efficiency into the integrated sales, design, factory production, and field erection processes. (UO,FSEC)	Develop and test prototype of computerized tool using the demonstration design. (UO, FSEC)

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Building Subsystems Interaction (Cont'd)	Identified and assessed the relationship between technological progress in home building and the business structure of industry. Characterized technology diffusion in the home building industry. Developed a methodology to evaluate emerging home building technologies. (NAHB/National Research Center) $700	Identify and evaluate emerging product and process innovations in the home building industry. Select promising innovations and develop case studies. Initiate development of a quality improvement program. (NAHB/NRC) $909	Develop and implement an approach to influencing the rate of adoption of emerging home building technologies. Implement a prototypical quality improvement program. Develop a national training and education program. (NAHB/NRC) $600
	Building Performance Simulation: Continued updating and maintaining DOE-2. Published quarterly DOE-2 User News. Continued monitoring building design practices to identify design features that cannot be simulated by DOE-2. Developed appropriate algorithms and codes for incorporation of these features into DOE-2.	Continue updating and maintaining DOE-2. Continue to identify building design features that cannot be simulated by DOE-2 and develop appropriate algorithms and codes for simulating them either in DOE-2 or through advanced computation technologies.	Continue updating DOE-2, including program maintenance, user assistance, and regular publication of DOE-2 User News. Complete updated versions of BASIC and advanced reference manuals.
	Continued development of advanced building performance simulation software DOE-3. Continued development of mathematical models simulating building component and system thermal performance for incorporation into the DOE-3 module library. (LBL, NIST) $750	Continue development of advanced building performance simulation software. Complete first version of DOE-3 which incorporates decentralized, modular concepts. (LBL) $494	Test first version of DOE-3 in different building types and designs. Coordinate development with researchers in other countries. Increase capability by incorporating component simulation models. (LBL, NIST) $643
	$ 2,100	$ 2,275	$ 3,800
Existing Buildings Research	Completed analysis of data from monitoring of single family retrofits and disseminated information to users including auditors, service businesses and homeowners. Completed the development of multifamily audit handbook and disseminated results to potential users. Completed methods of measuring energy savings from retrofits in low income/elderly households subsidized by Federal government. Issued a competitive solicitation to identify and test applications of retrofit technologies in existing	Monitor projects selected in FY 1989 solicitation of retrofit technologies in single family, multifamily, and commercial buildings and analyze results. Perform radiant barrier research and analysis and publish Fact Sheet. Complete 5-field monitoring projects of selected building retrofit technologies. (ORNL, LBL)	Analyze data from projects funded in FY 1989. Conduct cost shared field tests of retrofit strategies for residential sector and begin planning for cost shared commercial sector tests, using field monitoring protocols. Define and develop approaches to resolving institutional and financial barriers to retrofits. Using input from the Department of Housing and Urban Development (HUD) and State Energy Offices, develop criteria for selecting sets of retrofit measures that can be applied effectively in five U.S.

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Existing Buildings Research (Cont'd)	single family, multifamily and commercial buildings. (LBL, ORNL)		climates. Obtain final industry approval for monitoring protocols. (ORNL, LBL, PNL, IND)
	$ 1,304	$ 798	$ 1,300
Standards and Guidelines	Prepared revised Interim Energy Conservation Standards for New Federal Residential Buildings; initiated demonstrations of Interim Standards issued in FY 1988.	Begin preparation of a report to Congress on the findings of the Federal Residential Demonstration Project.	Complete report to Congress on the findings of the Federal Residential Demonstration Project. Initiate the development of the final Federal residential standards including modifications based on demonstration findings and advances incorporated in the Voluntary Residential Standards. Begin integration of the Federal Residential and Voluntary Residential Standards into a single Residental Energy Standard with a revised database to reflect recent research results. Activities mandated by PL 94-385, as amended.
	Printed supporting documentation, published NOPR, and conducted public hearings for the proposed Interim Voluntary Residential Standards.	Review public comments on the Voluntary Residential Standards. Prepare responses to public comments. Initiate update of standards based on public review. Prepare Interim Voluntary Residential Standards.	Initiate demonstration projects in at least five climatic regions to: (1) assess the impact of standards on builders, the cost of construction , designers, and the design process; (2) analyze impact of construction costs on ability of low to moderate income persons to purchase or rent housing; (3) analyze the impact of standards on energy savings by energy type. Work with State and local jurisdictions, professional and trade organizations, and model code organizations to develop model code language and explanatory material to facilitate voluntary adoption of the standards. Activity required by PL 94-385, as amended.

III. Building Systems (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Standards and Guidelines (Cont'd)	Published the Interim Commercial Standards that are mandatory for new Federal buildings and serve as voluntary guidelines for new non-Federal buildings. ($762 including $700 new BA and $62 prior year funds) (PNL)	Initiate the Interim Commercial Standards demonstration work to assess the impact of the standards on designers and on the design process for buildings in five climatic regions. Also, initiate assessment of the impact of the standards on builders and on the cost of construction. (PNL)	Continue to assess impact of Commercial Standards on designers and the building design process. Assess issues raised during the demonstration period (1993 lighting criteria, envelope glazing, and thermal mass credits, water heater standby loss critieria) and develop proposed criteria for final standards. Work with State and local jurisdictions, professional and trade organizations, and model code organizations to develop model code language and explanatory material to facilitiate voluntary adoption of the standards. Activity required by P.L. 94-385, as amended. (PNL) Create and support management team to conduct demonstrations, prepare training materials on compliance with the new standards, provide training program for architects, engineers, and code officials, and conduct design competition inviting architects and builders to compete in the demonstration project. This will include evaluating plans prepared by the winners and estimating their design energy performance. Develop monitoring protocols and instruments to measure the energy performance of the winning buildings.
	$ 700	$ 792	$ 5,000
Building Systems	$ 10,999	$ 10,964	$ 16,690

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Community Systems

The purpose of the Community Systems program is to provide the technical basis for improving the efficiency by which energy is delivered to buildings. District heating and cooling (DHC), when combined with cogeneration, allows thermal efficiencies of 85% or more, rather than those of 33% or 40% associated with the generation of electricity alone. The research conducted in this program is needed to enable DHC systems to compete economically with individual space conditioning systems and will provide environmentally sound and reliable operating systems for end users. This program contributes to the goal of energy security by providing increased efficiency of energy use with little change in life-style or energy supply infrastructure. The sub-program is working with industry to develop additives that will reduce friction and increase heat transfer capacity of working fluids, and to develop district cooling systems using desiccant or absorption processes that will replace chlorofluorocarbon (CFC) based materials. FY 1989 cost sharing with industry is at a rate of about 40%. It is anticipated that this level will continue through FY 1991.

II. A. Summary Table: Community Systems

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
District Heating and Cooling	$ 1,060	$ 2,116	$ 772	- 64
Community Energy Systems	2,000	1,978	0	-100
Total, Community Systems	$ 3,060	$ 4,094	$ 772	81

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory	$ 150	$ 75	$ 100	+ 33
Brookhaven National Laboratory	$ 200	$ 390	$ 150	- 62
Lawrence Berkeley National Laboratory	$ 0	$ 25	$ 500	>999

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Community Systems			
District Heating and Cooling	DHC Research and Development: Performed laboratory simulation tests for two district heating and two district cooling friction reduction additives and studied the effect on heat exchangers, pumps and meters. Conducted ice slurry loading and crystal size analysis. Completed construction and testing of 200-ton ethylene glycol water absorption chiller. Identified nonmetallic resins, extruded pipes and tested for high temperature application. Analyzed test bed configurations for recovering waste from diesel engine cogenerator for district cooling. Solicited proposals and selected innovative technologies to reduce DHC cost and improve efficiency. Tested downhole heat exchanger for mine water heat recovery. ($1,400 including $1,060 new BA and $340 prior year funds.) (ANL,BNL)	Continue testing of jet refrigeration system for district cooling. Complete laboratory testing of advanced heat transfer enhancement additives for low temperature application. Design robotic in-situ pipe inspection and repair. Test and evaluate thin membrane heat exchanger for ice slurry production. Develop low cost coating systems to provide corrosion protection and thermal insulation for DHC distribution system. Select projects for the implementation of innovative district cooling systems. (BNL, IND)	Perform full scale testing of district cooling additives. Graduate interaction with corrosion additives. Complete pilot-scale testing of jet refrigeration system for district cooling. Continue testing of advanced heat transfer enhancement additives for low temperature application. Begin testing of prototype piping in low density areas, to be 50% cost shared by industry. Continue IEA joint research on metering advanced fluids and information exchange. (ANL, BNL, IND)
	$ 1,060	$ 2,116	$ 772
Community Energy Systems	Urban Consortium: Conducted applied research and technology transfer projects (grants to local governments). Focused on technologies, projects and programs that reduce energy costs and improve energy efficiency in public services and facilities.	Conduct approximately 30 applied research projects that improve energy efficiency within urban areas. Topics include: local government operations, municipal buildings, and community development planning and design.	No Activity
	$ 2,000	$ 1,978	$ 0
Community Systems	$ 3,060	$ 4,094	$ 772

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Technology and Consumer Products

The purpose of the Technology and Consumer Products subprogram is to provide the technical basis for improved energy efficient equipment in buildings. The equipment research in this subprogram contributes to a cleaner environment by reducing stack emissions, eliminating ozone depleting CFCs and ensuring the efficient use of natural gas. Supporting research ensures that human health and safety and workplace productivity are not adversely impacted. This subprogram contributes to the goal of energy security by encouraging a substantial reduction in energy use with little change in life-style or energy supply infrastructure.

The goal of the Thermally Activated Heat Pump (TAHP) activity is to provide a more efficient means of energy conversion for natural gas and oil heating systems, with improvements of over 50% for heating and cooling capacity comparable or better than what is currently available. Substituting natural gas or oil for electricity in the cooling mode provides an added benefit: reduction of the summer peaking load experienced by electric utilities. A theoretically achievable efficacy limit of 200 lumens per watt is the target of the lighting research activity; this could result in an annual energy savings of 400 billion kWh. The advanced refrigeration research goals include alternatives to ozone depleting CFCs that ensure the availability of more energy efficient technology options.

For the near-term, the subprogram is working with industry to provide absorption heat pump technology for the residential market and seeking to identify CFC alternatives for application to refrigeration equipment. Efforts in lighting research may result in the near-term availability of advanced lighting fixtures. For the mid-term, the subprogram is developing several types of thermally activated heat pumps (absorption, Stirling engine and internal combustion (IC) engine driven) for application to different size buildings. For refrigeration equipment, advanced technologies for chlorofluorocarbon (CFC) replacement are being developed. More advanced light sources are being targeted, such as the surface wave lamp. For the long-term, the subprogram is conducting exploratory research on novel thermally activated heat pump cycles such as the Duplex Stirling.

During FY 89 the subprogram achieved cost sharing arrangements with industry averaging 17%. This involved 13% in actual funds and 4% of in-kind support. The goal for FY 91 is 20% cost sharing. This increase reflects industry's concern over such issues as ozone depletion and greenhouse effects and its desire to work more closely with government to resolve these problems.

II. A. Summary Table: Technology and Consumer Products

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Thermally Activated Heat Pumps....................	$ 6,128	$ 6,132	$ 4,100	- 33
Advanced Refrigeration Systems....................	2,865	4,373	4,974	+ 14
Combustion and Thermal Distribution.............	750	989	0	-100
Advanced Lighting..................................	2,500	2,522	1,600	- 37
Total, Technology and Consumer Products	$ 12,243	$ 14,016	$ 10,674	- 24

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Lawrence Berkeley National Laboratory	$ 5,000	$ 4,886	$ 3,200	- 35
Brookhaven National Laboratory	$ 555	$ 200	$ 0	-100
Oak Ridge National Laboratory	$ 6,128	$ 5,941	$ 4,100	- 31
Pacific Northwest Laboratory	$ 100	$ 100	$ 100	0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Technology and Consumer Products			
Thermally Activated Heat Pumps	Absorption Technology: Completed testing and evaluation of two different concepts of commercial size advanced cycle absorption heat pump laboratory breadboard systems. Continued development of critical components for a packaged prototype residential size heat pump. Continued solution pump development. Continued heat and mass transfer research. ($3,433 including $3,300 new BA and $133 prior year funds.) (ORNL, Phillips, Trane, Carrier) $3,300	Continue design evaluation and testing of critical components of laboratory prototype residential size absorption heat pump. Inititate design and fabrication of engineering field test units. Continue evaluation and testing of corrosion free solution pumps concepts using ceramic and composite materials. Continue supporting research in heat and mass transfer. Initiate hardware evaluation of commercial size advanced absorption concepts. (ORNL, Phillips, manufacturers) $3,300	Begin initial two-year, cost shared field evaluation of residential size advanced cycle absorption heat pump, and complete fabrication of four test units for field installation. Continue solution pump development. Further development needed to attain reliability, operability, cost and performance goals in complete residential system. (ORNL, Phillips, utilities) $2,100
	Stirling Engine Technology: Initiated detailed design and fabrication of key components of magnetically coupled free piston Stirling engine (FPSE) system. Continued supporting university research in cylinder heat transfer. Initiated a cooperative evaluation of Stirling cycle systems. (ORNL, NASA, Sunpower, Mechanical Technology, Inc., Massachusetts Institute of Technology) $1,628	Continue design and fabrication of critical components for a magnetically coupled free piston Stirling engine driven heat pump laboratory breadboard unit. Continue design and fabrication of combustion systems for Stirling engines. Continue supporting university research in cylinder heat transfer. Initiate Phase I concept evaluation for Stirling refrigeration cycle systems. (ORNL, Sunpower, Mechanical Technology, Inc., Massachusetts Institute of Technology) $1,632	Initiate laboratory test and evaluation of residential size laboratory breadboard magnetically coupled FPSE driven heat pump. Continue design optimization and testing of critical components for Stirling engine compressors, i.e. combustion systems and control systems. Magnetically driven system appears to have the best potential for meeting cost goals. (ORNL, Sunpower, Mechanical Technology, Inc.) $1,200

III. Technology and Consumer Products (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Thermally Activated Heat Pumps (Cont'd)	I.C. Engine Technology: Continued test and evaluation of laboratory breadboard free piston I.C. engine/compressor for small commercial buildings. Initiated development of critical engine compressor components for heat pump application. (ORNL, Tectonics) $1,200	Continue test and evaluation of bellows seal assembly under environmental conditions. Evaluate alternate seal concepts for near-term application. Continue development and fabrication of critical components for laboratory prototype commercial size heat pump. (ORNL, Tectonics) $1,200	Continue test and evaluation of laboratory model free piston engine compressor. Begin final design of an engineering prototype. The free-piston I.C. engine is currently the best choice for heat pumps for small commercial buildings. (ORNL, Tectonics) $800
	$ 6,128	$ 6,132	$ 4,100
Advanced Refrigeration Systems	Vapor Compression Systems: For nonazeotropic refrigerant mixtures (NARM), continued characterizing potential benefits of composition shifting and investigating advanced cycle concepts. Initiated research on advanced heat exchangers for use with NARMS. Conducted exploratory assessment of regenerative cycle concepts. Completed research on capacity modulation. (ORNL, EPA, NIST, SERI, Air Conditioning and Refrigeration Institute) $1,300	Continue laboratory breadboard testing of refrigerant mixtures in advanced cycle configurations. Continue supporting research on determining engineering properties of novel refrigerant mixtures. (ORNL, NIST, Air Conditioning and Refrigeration Institute) $887	Continue research in improving heat pump performance by using nonazeotropic refrigerant and near azeotropic refrigerant mixtures, including research on novel heat exchanger concepts to improve system performance. (ORNL, NIST, SERI, Air Conditioning and Refrigeration Institute, Association of Home Appliance Manufacturers) $1,374
	CFC Refrigerant Alternatives: Conducted preliminary performance testing of alternative refrigerants in refrigerator-freezers. Initiated laboratory research to determine the thermophysical properties of candidate non-CFC alternative refrigerants. Analyzed the potential energy impact of technologies which could substitute for existing ozone depleting CFCs. (ORNL, NIST) $300	Initiate cooperative research with industry consortia on materials compatibility and lubricants for substitute refrigerants to replace restricted CFC compounds. Initiate supporting research on data collection and dissemination, materials compatibility testing, and methods development. Initiate research on performance testing of new refrigeration and air conditioning systems with the substitute refrigerants. (ORNL, NIST, Air Conditioning and Refrigeration Institute, Association of Home Appliance Manufacturers) $2,475	Expand cooperative research with industry consortia on materials compatibility and lubricants for substitute refrigerants. Continue supporting research on data collection and dissemination, materials compatibility testing, and methods development. Continue characterizing, testing, and evaluating leading substitute refrigerants and mixtures. Continue research on testing and evaluating materials of construction (metals, plastics, elastomers, and lubricants) compatible with substitute refrigerants. Conduct laboratory breadboard testing of prototype non-CFC refrigerators for efficiency and performance. Conduct performance testing and evaluation of centrifugal chillers with substitute refrigerants. (ORNL, NIST, Air Conditioning and Refrigeration Institute, Association of Home Appliance Manufacturers) $3,200

III. Technology and Consumer Products (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Refrigeration Systems (Cont'd	Solar Cooling and Dehumidification Research: Continue research to characterize candidate polymeric desiccant costs and performance. Determine optimal strategies for reducing contaminant induced degradation. Continue testing and evaluation for effectiveness of innovative solid desiccant matrix materials' configurations. Continue validation of open-cycle solar cooling configurations. Continue research on the heat and mass transfer effectiveness of glazed roof regenerators for open cycle absorption systems. Investigate performance impacts of non condensibles and the environmental impact of absorbents and additives. Validate analytical modeling of moisture absorption/desorption and transport in solar materials. (Conducted by Solar Buildings Program) $1,265	Solar Cooling and Dehumidification Research: Develop performance criteria for advanced desiccant materials for solar building applications. Synthesize polymeric materials meeting criteria for increased adsorption properties and required self-supporting structural characteristics. Evaluate suitability for solid and liquid desiccant dehumidifiers. Evaluate test measures to minimize contamination and degradation of silica gel, lithium chloride, molecular sieve, and selected polymer desiccants, resulting from smoke and other airborne contaminants. Determine fundamental behavior of moisture and thermal propagation in desiccant dehumidifiers employing candidate advanced polymeric materials. Evaluate performance impacts of passage size, spacing, material thickness and general geometry of parallel passage, honeycombs and other configurations. Complete validation and evaluation of analytical techniques for open cycle solar adsorption cooling configurations. Develop combined moisture/heat transport models for incorporation in public domain analysis tools. (Conducted by Solar Buildings Program) $1,011	Test advanced polymer desiccant materials with improved absorption and self supporting properties and durability. Field test measures developed to minimize desiccant degradation. Develop guidelines for improving dehumidification reliability for buildings applications. Test prototype advanced diurnal desiccant based, solar regenerated cooling/dehumidification technologies for nonresidential buildings. Conduct cyclic performance tests of advanced dehumidification designs incorporating polymeric desiccant materials (SERI, Florida Solar Energy Center) $400
	$ 2,865	$ 4,373	$ 4,974
Combustion and Thermal Distribution	Continued research on advanced oil heating technologies including direct venting, diagnostics and control, atomization and combustion phenomena. Reevaluated available field test data to verify energy losses in distribution systems. (BNL, Battelle) $750	Continue supporting research on oil heat venting technology and performance control strategies. Evaluate impacts of variations of fuel oil quality on combustion performance. Initiate cooperative technology based information dissemination effort for the oil industry. (BNL) $900	No Activity.
	$ 750	$ 900	$ 0

III. Technology and Consumer Products (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Lighting	Light Sources: Continued research on surface wave fluorescent lamps, including low and medium intensity versions. Conducted experiments on the effectiveness of inductive techniques for driving electrodeless high intensity discharge (HID) lamps. Continued monitoring isotope separation process research funded with prior year funds. Continued cost shared advanced phosphor materials research. (LBL, GTE Electrical Products, New York University) $1,900	Continue optimization and modelling studies of the low pressure surface wave fluorescent lamp using lamps fabricated in-house for improved quality control and begin fabrication of medium intensity lamps for lab testing. Continue electrodeless high intensity discharge (HID) lamp research focussing on the attainment of a low wattage, stable lamp with good color using inductive drive. Initiate long-term tests of isotopically enriched lamps produced using pilot plant mercury isotopes. Continue advanced phosphor materials research. (LBL, GTE Electrical Products) $1,700	Continue modelling studies of the surface wave fluorescent lamp concept to optimize lamp/electronics design parameters. Complete a review of the potential of surface wave excitation for medium/high intensity lamps. For the inductively coupled HID lamp, initiate development of magnetic coupling via a combined reflector-coil device. The surface wave and inductive HID lamp concepts address different markets with substantial efficiency improvement potential. (LBL) $1,200
	Lighting Impacts and Applications Research: Identified pupil size impacts from light source spectrum variations and characterized a spectral distribution which maximizes energy performance. Continued research on discomfort glare and flicker. Continued development of concepts for fixture thermal control. Continued development of lighting design computer models and completed initial development of computer imaging tool. Continued lighting/HVAC/envelope interaction research. (LBL, NIST, University of California) $600	Identify preliminary worker productivity impacts from light source spectrum variations. Continue research on the effects of lamp flicker and discomfort glare. Develop plans for field verification of flicker and spectral impacts on worker productivity. Continue development of concepts for thermal control of fluorescent fixtures including passive conductive thermal bridges and active Peltier devices. Continue development of computer aided design program based on imaging techniques. Continue lighting/HVAC/envelope interaction research. (LBL, NIST, University of California) $822	Complete research on the effect of spectral quality on visual performance and determine implications for advanced lamps. This research ensures that advanced lamps do not adversely impact workplace productivity. Continue development of active and passive lamp temperature control devices. These devices ensure that thermal effects do not reduce efficiency of lighting systems. (LBL, University of California) $400
	$ 2,500	$ 2,522	$ 1,600
Technology and Consumer Products	$ 12,243	$ 14,016	$ 10,674

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Technology Assessment and Transfer

The goal of the Technology Assessment and Transfer subprogram is to ensure that the portfolio of projects in Buildings and Community Systems (BCS) maximizes energy efficiency and advances pollution reduction, international competitiveness, health and safety, and energy security.

Technical Evaluation, Analysis and Planning ensures that the research conducted addresses the highest priority national needs, is supported by industry, provides key knowledge needed by decision makers, is cost-effective, and is likely to succeed.

The Least-Cost Utility Planning (LCUP)/Integrated Resource Planning program works as a catalyst with utilities and public utility commissions to facilitate exchange of information that encourages the use of demand-side management to reduce the need for new supplies and to improve utility load factors. By avoiding the need to construct costly generating plants, the activity reduces emissions and other undesirable environmental impacts. This budget request proposes to expand the Integrated Resource Planning (IRP) Program to assist electric and gas utilities in acquiring cost-effective, energy-efficient load-management resources and encourage the Federal Energy Regulatory Commission (FERC) to assist in measurement and coordination of utility program implementation. Success in this program could improve the rate of return on utility investments and contribute substantially to a clean environment and energy security.

Technology and Information Transfer ensures that key knowledge is transferred to the appropriate user in a form and time frame that maximizes adoption and thus accelerates achievement of energy savings pollution reduction, international competitiveness, and energy security. Acceleration of Near Term Conservation is an aggressive new initiative in technology transfer that would work in partnership with associations and industry. In-kind services and cost sharing would almost equal the Federal share. The FY 1989 cost sharing of 25-30% with states and utilities is expected to continue.

For the near-term, the subprogram is working to implement a new strategy, reassess projects, assess projects for environmental benefits, develop a technology transfer plan targeted to specific industry segments, complete LCUP projects and disseminate results to utilities and strengthen U.S. participation in the International Energy Agency's Center for the Analysis and Dissemination of Demonstrated Energy Technologies (CADDET). For the mid-term the subprogram is improving planning systems, accelerating technology transfer activities and focusing Integrated Resource Planning on key barriers to stronger demand-side programs.

II. A. Summary Table: Technology Assessment and Transfer

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Technical Evaluation, Analysis and Planning.....	$ 600	$ 396	$ 1,925	+386
Least-Cost Utility Planning/Integrated Resource Planning..................................	900	1,286	3,908	+203
Technology and Information Transfer..............	650	593	725	+ 22
Acceleration of Near-Term Conservation..........	0	0	1,500	
Total, Technology Assessment and Transfer	$ 2,150	$ 2,275	$ 8,058	+254

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Brookhaven National Laboratory	$ 240	$ 300	$ 750	+150
Lawrence Berkeley National Laboratory	$ 530	$ 655	$ 1,400	+114
Oak Ridge National Laboratory	$ 600	$ 420	$ 880	+110
Pacific Northwest Laboratory	$ 430	$ 230	$ 520	+126
Solar Energy Research Institute	$ 125	$ 100	$ 300	+200

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Technology Assessment and Transfer			
Technical Evaluation, Analysis and Planning	International Energy Agency Support: Continued support for IEA implementing agreements. Assessed impact on international trade and U.S. technology leadership. (LBL) $100	Continue support for IEA implementing agreements. Continue studies of buildings conservaton technologies used in developed countries and assess impact on international trade and U.S. technology leadership. (LBL) $99	Continue support for IEA implementing agreement on the Center for the Analysis and Dissemination of Demonstrated Energy Technologies (CADDET), and continue studies of foreign conservation programs. (ORNL, LBL) $200
	Planning and Analysis: Maintained Building Energy Accounting Systems (BEAS), published annual analysis of current and proposed BCS programs, updated annual and multi-year plans. (PNL, BNL) $300	Continue detailed assessments of each technology and area to determine feasibility and potential. Conduct contingency planning for national security and international competitiveness. Maintain Building Energy Accounting Systems (BEAS), publish data book and annual analysis of current and proposed BCS programs. $285	Establish external (to DOE) teams to assist in characterizing and reassessing current and potential buildings energy-efficient technologies and practices, including foreign technologies. Assessment of environmental and international competitiveness benefits. Estimate market penetration potential and identify barriers to and incentives necessary for effective penetration. Expand the Building Energy Accounting Systems (BEAS) to include all new data, publish updated data book and annual report of analysis. Prioritize BCS program activities and publish corresponding multi-year plan. (BNL, PNL, SERI) $1,445

III. Technology Assessment and Transfer (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Technical Evaluation, Analysis and Planning (Cont'd)	Building Energy Compilation and Analysis: Jointly with universities, utilities and the building industry assembled, standardized and analyzed the energy saving performance of building designs, technologies, and retrofits, for residential and commercial buildings. (LBL) $200	No Activities.	Continue compiling information on performance of new and retrofitted, residential and commercial buildings, focusing on results from state, city and utility energy conservation programs. Assist states, cities and utilities in designing effective programs. This work will greatly accelerate the adoption of available energy saving technologies and building practices, thus improving national security quality. (LBL) $250
	$ 600	$ 396	$ 1,925
Least-Cost Utility Planning/Integrated Resource Planning	Jointly with utilities and utility regulators performed case studies of integrated utility planning processes (IUPP) and evaluated State programs; reviewed and assessed utility demand-side plans; and conducted research in bidding, uncertainty and environmental benefits of integrated utilities' resource planning. Developed analytical tools and support data. Developed technology transfer information network for utilities and utility regulators. Initiated a cost-shared solicitation with Northeast rural electric utilities. ($1,886 including $900 new BA of $986 prior year funds.) (ORNL, LBL)	Evaluate integrated utility planning processes and plans developed by utilities; analyze alternative mechanism for providing utilities with incentives to implement conservation programs. Develop research framework for analysis of environmental aspects of integrated resource planning; conduct workshops for utility regulators on implementation of integrated resource planning. (National Association Regulatory Utilities Commission (NARUC), LBL, ORNL, BNL, PNL, IND)	Continue the evalution of integrated utility planning processes and plan developed by utilities and develop a manual for evaluation of least-cost plans. Evaluate alternative techniques for providing utilities with profit incentives for demand reduction and for conducting demand side bidding. Continue workshops and information dissemination. Expand least-cost planning into integrated resource planning in order to include all fuel sources in electricity planning. Develop least-cost planning for gas utilities. Accelerate development of methods to incorporate externalities, such as environmental and risk reduction factors, and methods to incorporate full life cycle and fuel cycle costs into resources planning. Expand analysis of utility profitability and incentive strategies for implementing least-cost planning. Monitor, validate and disseminate data on utilities conservation and load management programs experience. Expand training, networking and arrange for exchange of research results among industry,

III. Technology Assessment and Transfer (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Least-Cost Utility Planning/Integrated Resource Planning (Cont'd)			regulators and government organizations. This work is needed to stimulate broader utilization of least-cost planning among the utilities. (NARUC, LBL, ORNL, BNL, IND)
	$ 900	$ 1,286	$ 3,900
Technology and Information Transfer	Continued to improve technology transfer system to monitor research progress and ensured that research results were transferred quickly, efficiently, and effectively to the private sector. Continued to work with other organizations and associations to sponsor workshops, symposia, conferences, and committees to quickly and effectively transfer BCS research results. Continued the preparation and publication of state-of-the-art reports on selected aspects of efficient use of energy in buildings, building equipment, and community systems. (ORNL, SERI)	Continue to improve technology transfer system to monitor research and ensure that results are transferred quickly, efficiently and effectively to the private sector. Continue to work with other organizations and associations to sponsor workshops, symposia, conferences, and committees to quickly and effectively transfer BCS research results. Continue the preparation and publication of state-of-the-art reports on selected aspects of efficient use of energy in buildings, building equipment, and community systems. Continue educational institutes.	Continue to improve technology transfer system by working with associations, industry and public sector to improve the distribution of appropriate and useful information to decision makers, so that current technical information can be quickly and effectively used. With other organizations, continue to support workshops, educational institutes, and conferences. Continue publication of state-of-the-art reports on selected aspects of efficient use of energy in buildings, building equipment, and community systems. This activity ensures that information obtained from Federal activities is given to those who can use it most effectively; ensuring that Federal expenditures provided maximum benefits. (ORNL, SERI, IEA)
	$ 650	$ 593	$ 725

III. Technology Assessment and Transfer (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Acceleration of Near-Term Conservation	No Activities.	No Activities.	Conduct a campaign to increase the adoption of available conservation technologies. Work with the building industry to identify and assess the barriers. Promote adoption of Uniform Home Energy Rating and Energy Efficient Mortgage Systems. Establish the Building Efficiency and Conservation Network (BEACON) to collect and disseminate data on energy performance of building technologies and practices. Collect, analyze and disseminate information from field tests of conservation retrofits to Federally-assisted and low-income housing funded by HUD and the Weatherization Program. These efforts are needed to provide near-term energy savings and environmental benefits by countering current rapid growth of energy use in the buildings sector (1.4 quads increase from 1987 to 1988).
	$ 0	$ 0	$ 1,500
Technology Assessment and Transfer	$ 2,150	$ 2,275	$ 8,050

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Appliance Standards

The purpose of the Appliance Standards subprogram is to conduct the analyses and regulatory activities necessary to comply with the Energy Policy and Conservation Act (EPCA), as amended. The subprogram consists of research activities on appliance test procedures, and energy conservation standards. The test procedures contribute to the goal of energy security by supporting the Federal Trade Commission's appliance labeling program which provides energy efficiency and cost of operation data to assist consumers in making appliance purchase decisions. The standards contribute to the goal of energy security by setting energy conservation requirements that mandate the maximum improvement in energy efficiency that is economically justified and technologically feasible. The standards legislated by EPCA are estimated to have an energy savings potential of more than 800 billion kWh in electricity generation and almost 2 quads of direct fuel use by the year 2015. More efficient appliances provide a cleaner environment by reducing stack emissions and ensuring the efficient use of natural gas, thereby reducing the emissions of greenhouse gases.

The research and regulatory activities necessary to comply with the appliance test procedure and energy conservation standards requirements of EPCA are an important strategy for achieving energy efficiency improvements in the near term. The research and regulatory activities performed to meet the requirements of EPCA will provide the basis for appropriate future appliance test procedures and energy conservation standards and will result in continuing energy efficiency benefits into the mid- and long-term.

Since this is a regulatory program, there is no direct cost sharing. However there is significant industry interaction throughout the regulatory process. Also, the industry participates by supporting the testing of its equipment, and through the advertising of products based upon their energy efficiency, both based on the DOE developed test procedures.

II. A. Summary Table: Appliance Standards

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Test Procedures and Consumer Education..........	$ 700	$ 692	$ 750	+ 8
Appliance Standards Development.................	973	1,088	1,250	+ 15
Total, Appliance Standards	$ 1,673	$ 1,780	$ 2,000	+ 12

II. B. Major Laboratory and Facility Funding

Lawrence Berkeley National Laboratory	$ 1,000	$ 1,000	$ 1,175	+ 18

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Appliance Standards			
Test Procedures and Consumer Education	Continued research to develop, maintain, simplify and improve test procedures for appliances (furnaces, water heaters, and central air conditioners) in support of Federal Trade Commission's (FTC) labeling program; to develop test procedures for integrated heat pump/water heater and fluorescent lamp ballasts; and to process manufacturer requests for waiver of test procedures. (NIST)	Continue research to develop, maintain, simplify and improve test procedures for appliances (furnaces, water heaters and refrigerators) in support of the FTC labeling program; to continue development of test procedures for integrated heat pump/water heater and fluorescent lamp ballasts; and to process manufacturer requests for modification of test procedures.(NIST)	Continue research to develop, maintain, simplify and improve test procedures for appliances (furnaces, central air conditioners, and water heaters) in support of the FTC labeling program; continue development of test procedures for integrated heat pump water heater and water heater/furnace; and to process manufacturer requests for modification of test procedures. Analysis and rulemakings are required by EPCA to support FTC labeling program and DOE appliance standards. (NIST)
	$ 700	$ 692	$ 750
Appliance Standards Development	Continued to perform research on impacts of appliance standards (including publishing a final rule for small furnaces and refrigerators, and a proposed rulemaking for dishwashers, clothes washers and clothes dryers). ($985 including $973 new BA and $12 prior year funds.) (LBL)	Continue to perform the analysis and research required to implement the National Appliance Energy Conservation Act, including publishing a final rule for dishwashers, clothes washers, and clothes dryers; and a proposed rule for room air conditioners, mobile home furnaces, water heaters, kitchen ranges and ovens, pool heaters, direct heating equipment and fluorescent lamp ballasts. (LBL)	Continue to perform the analysis and research required to implement the requirements of the National Appliance Energy Conservation Act (NAECA) including publishing a final rule for room air conditioners, mobile home furnaces, water heaters, kitchen ranges and ovens, pool heaters, direct heating equipment, fluorescent lamp ballasts, and television sets; and a proposed rule for furnaces and central air conditioners. (LBL)
	$ 973	$ 1,088	$ 1,250
Appliance Standards	$ 1,673	$ 1,780	$ 2,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Federal Energy Management Program

The Federal Energy Management Program (FEMP) provides direction, guidance and assistance to Federal agencies to improve the efficiency and fuel flexibility of energy use in Federal building, transportation and operations and to transfer energy management experience among Federal agencies. The goal of the program is to provide leadership in the Federal sector by demonstrating energy efficient techniques and technologies, such as new lighting technologies, so that Federal energy consumption is reduced by 10% by 1995. The aging infrastructure of the Federal government offers a significant opportunity to save energy through energy efficient retrufits.

The program focuses on near term activities to develop engineering and management tools for Federal energy managers to use in improving the energy efficiency of their facilities and on demonstrating effective techniques and technologies for improving energy utilization in the Federal infrastructure. Projects to demonstrate advanced energy technologies are 50% cost shared by other Federal agencies and the private sector.

II. A. Summary Table: Federal Energy Management Program

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Federal Planning, Coordination, Reporting and Evaluation....................................	$ 400	$ 396	$ 500	+ 26
Program Technical Guidance and Assistance.......	600	791	2,500	+216
Total, Federal Energy Management Program	$ 1,000	$ 1,187	$ 3,000	+153

II. B. Major Laboratory and Facility Funding

Pacific Northwest Laboratory	$ 500	$ 600	$ 1,600	+167

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Federal Energy Management Program			
Federal Planning, Coordination, Reporting and Evaluation	Continued preparation of legislated annual reports and tracking of agencies' progress in meeting legislated goals. Continued promotion of shared savings activities to other Federal agencies. Continued operation and development of a data base to allow for the exchange of technical information on energy efficient techniques and technologies, between and among Federal agencies. Evaluated outcome of shared savings and other third party financing efforts to determine which activities represent the best return for the Federal government. Continued to use the "656" Committee and its subcommittees to coordinate Federal energy activities. Continued the Federal Energy Efficiency Awards program and coordination of Federal agencies' participation in Energy Awareness Month.	Continue preparation of legislated annual reports and tracking of agencies' progress in meeting legislated goals. Continue promotion of shared savings activities to other Federal agencies. Continue operation and development of a data base to allow for the exchange of technical information on energy efficient techniques and technologies, between and among Federal agencies. Evaluate outcome of shared savings and other third party financing efforts to determine which activities represent the best return for the Federal government. Continue to use the "656" Committee and its subcommittees to coordinate Federal energy activities. Continue the Federal Energy Efficiency Awards program and coordination of Federal agencies' participation in Energy Awareness Month.	Collect and analyze Federal energy data to prepare annual reports to the President and the Congress to meet legislated reporting requirements. Coordinate Federal energy activities as mandated by law through the Interagency Energy Policy Committee and the Energy Management Task Force to improve energy efficiency of Federal operations. Disseminate information to Federal energy managers on energy related techniques, technologies and activities of other Federal agencies. Evaluate energy programs and projects for their potential application to the Federal government's operations and transfer information on technologies which will improve energy utilization in Federal applications. Conduct the Federal Energy Efficiency Awards program to provide recognition to Federal employees who provide leadership in energy management. Coordinate Federal agencies' particpation in Energy Awareness Month.
	$ 400	$ 396	$ 500
Program Technical Guidance and Assistance	Continued education and training of Federal energy decision makers in energy efficient techniques and technologies. Continued support and training for the conduct of agency energy surveys, including the development and dissemination of materials and tools that are useful to Federal energy managers, architects and engineers. Continued to support activities leading to the implementation of sharud savings contracts in the Federal sector. ($607 including $600 new BA and $7 prior year funds.)	Continue education and training of Federal energy decision makers in energy efficient techniques and technologies. Continue support and training for the conduct of agency energy surveys, including development and dissemination of materials and tools that are useful to Federal energy managers, architects and engineers. Continue to support activities leading to the implementation of shared savings contracts in the Federal sector. Assist agencies in selection and implementing energy efficient	Develop cooperative agreements between Federal agencies and the private sector to install and operate advanced state of the art energy equipment such as improved lighting in Federal facilities. Under such cooperative agreements the private sector would finance the installation, operation, and maintenance of the equipment. DOE will instrument, monitor, and evaluate the equipment and the host Federal agency will provide the facility and any modifications to the facility to allow for the installation of the new

III. Federal Energy Management Program (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Program Technical Guidance and Assistance (Cont'd)		technologies.	equipment. Provide educational materials and training to Federal energy managers to improve their knowledge and skills in areas such as Federal life cycle costing procedures, shared energy savings contracting, energy monitoring and energy management. Develop analysis and monitoring tools necessary to do whole facility energy monitoring. Provide technical assistance through DOE National Laboratories to Federal agencies to develop and implement prototypical energy projects that will improve energy utilization as agencies modernize their infrastructure and will be transferrable to other Federal agencies. (PNL)
	$ 600	$ 791	$ 2,500
Federal Energy Management Program	$ 1,000	$ 1,187	$ 3,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Program Direction

The requested funding will provide salaries, benefits, travel and support for a staff of 51 to manage the Buildings and Community Systems program.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction...............................	$ 3,370	$ 3,449	$ 3,681	+ 7
Total, Program Direction	$ 3,370	$ 3,449	$ 3,681	+ 7

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provide salaries, benefits, travel and support for a staff of 58 FTEs to manage BCS programs. ($3,436 including $3,370 new BA and $66 prior year funds.)	Provide salaries, benefits, travel, and support for a staff of 61 FTEs to manage BCS programs.	Provide salaries, benefits, travel and support for 51 FTEs to manage BCS programs.
	$ 3,370	$ 3,449	$ 3,681
Program Direction	$ 3,370	$ 3,449	$ 3,681

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

BUILDING AND COMMUNITY SYSTEMS

I. Preface: Capital Equipment

The requested Capital Equipment funding will provide items of laboratory and test equipment needed to support all Buildings and Community Systems subprograms. These items are required to carry out planned research activities at participating national laboratories and universities.

II. A. Summary Table: Capital Equipment

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Capital Equipment	$ 1,210	$ 1,003	$ 1,100	+ 10
Total, Capital Equipment	$ 1,210	$ 1,003	$ 1,100	+ 10

II. B. Major Laboratory and Facility Funding

Argonne National Laboratory	$ 0	$ 0	$ 0	0
Brookhaven National Laboratory	$ 0	$ 50	$ 50	0
Lawrence Berkeley National Laboratory	$ 648	$ 450	$ 450	0
Oak Ridge National Laboratory	$ 335	$ 400	$ 420	+ 5
Pacific Northwest Laboratory	$ 0	$ 0	$ 80	>999
Solar Energy Research Institute	$ 0	$ 72	$ 100	+ 39

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Capital Equipment	Acquire testing and diagnostic laboratory equipment to support surface wave high intensity discharge lighting research at LBL; acquire diagnostic platforms required for mounting roof test specimens in the Large Scale Climate Simulator (LSCS) at the Roof Research Center (RRC) at ORNL; laboratory test equipment for indoor air quality at LBL and building materials research at ORNL; Class B monitoring data acquisition systems for building energy retrofit research at ORNL; and upgrade the test rig required for research in nonazeotropic refrigerant mixtures (NARM) at ORNL.	Acquire materials and equipment to field test alternatives to CFC-blown insulation; power supply, spectrophotometer and handling equipment for surface wave and electrodeless High Intensity Discharge lamp research; pumps, heat exchanger and meters for testing impact of advanced fluids on BHC equipment; compressor and instrumentation for research on use of ice slurries in district cooling; calorimeter rig expansion and other laboratory equipment for nonazeotropic refrigerant mixtures research; advanced data storage, imaging, and graphic presentation equipment for advanced commercial buildings and research; and equipment to support the FEMP mobile energy laboratories.	Data acquisition system and humidity-temperature and Kesternich chambers for roof and materials research at ORNL; signal analyzer, ventilation test cell and measurement system for IAQ,IV research at LBL and SERI; peripheral equipment to support AEDOT and building energy targets research at PNL; ultra-high frequency power supply, light detection system and data acquisition equipment for lighting research at LBL; data acquisition system and test rig to support alternative refrigerant research at ORNL; diagnostic, data acquisition and analysis equipment for existing buildings research at ORNL and LBL; monitoring equipment for LCUP research at BNL; and for district heating and cooling research at ANL.
	$ 1,210	$ 1,003	$ 1,100
Capital Equipment	$ 1,210	$ 1,003	$ 1,100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Obligations in thousands of dollars)

OBJECT CLASS SUMMARY

Buildings & Community Systems

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent....................	$2,647	$2,675	$2,868
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	265	268	287
11.9 Total personnel compensation...........	2,912	2,943	3,155
12.1 Civilian personnel benefits............	291	294	315
21.0 Travel and transportation of persons...	155	200	201
25.0 Other services.........................	28,037	31,482	41,196
31.0 Equipment..............................	1,210	1,003	1,100
32.0 Land & structures......................	0	0	0
Totals......................................	$32,605	$35,922	$45,967

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION

OVERVIEW

INDUSTRIAL ENERGY CONSERVATION

The Office of Industrial Programs (IP) contributes to the Department of Energy objectives of energy security, improved international competitiveness, and environmental quality by supporting research and development activities to improve energy use efficiency and provide for fuel flexibility within U.S. industry. The industrial sector consumes 36 percent of U.S. energy. Simply stated, the objectives of IP, as a subset of the DOE's objectives, are to (1) increase the end-use energy efficiency and productivity of industrial operations; (2) expand industry's energy options in order to facilitate use of the most cost effective and available fuels; and (3) ensure that developed technologies conform to safety, health, and environmental requirements. Other R&D objectives are to advance U.S. technological leadership through scientific and technical knowledge; to improve the U.S. competitive position by emphasizing cooperative efforts among Government, research and academia; and to facilitate the effective transfer of technology information by making the results of R&D available widely and promptly in the marketplace.

The basic strategy of the Office to accomplish these objectives is to identify, together with private industry, the technological needs for achieving energy conservation in the industrial sector; identify what private industry is doing or will do alone; select the highest priority targets that cannot reasonably be expected to be undertaken alone by the private sector; negotiate cost-shared contracts with private industry, or contract with universities or government laboratories, to carry out the Federal research and development activity to the point where the new technology has been proven to work; and disseminate the "results" to the private sector end-users.

In recent years, many of the largest U.S. industries have been competing, in both domestic and foreign markets, with aggressive international competitors which offer better and less expensive products and which have a productivity edge in basic manufacturing processes. This has led to a worsening U.S. trade position. One important factor in this situation is industry's comparatively inefficient use of energy. Most U.S. industries have much lower energy efficiencies than do their counterparts in other countries.

Many of the technology areas supported by the program affect more than one industry group. The focus of the program has been directed toward those activities that the private sector agrees are important in accelerating the availability of advanced, cost-effective technology, and that offer the greatest payback. To leverage limited government funding and to ensure industry support, emphasis is placed on cost-sharing R&D with industry, trade associations and other interested organizations. Additionally, as in previous years this budget supports the performance of beneficial work for other activities performed on a reimbursable basis including costs associated with the use of facilities and staff resources.

Waste Energy Reduction: This subprogram supports research and development of energy-efficient technologies to recover energy contained in industrial waste streams and waste materials, and to more efficiently utilize the energy content in fuels. These efforts are applicable across a wide spectrum of industries, being directed toward waste heat recovery; combustion efficiency; and industrial waste materials utilization for recycling, feedstocks, and alternative fuels. This subprogram also includes national laboratory management support for the total program.

Industrial Process Efficiency: This subprogram supports research and development of technologies and techniques to improve energy efficiency and productivity in the most energy-intensive industrial sectors of the U.S. economy. Research activities are carried out in various generic clusters, including: process electrolysis, materials processing, sensors and control systems, and separations.

Industrial Cogeneration: This subprogram supports comprehensive research, development, and testing efforts on new cogeneration technologies, focusing on topping cycles, which involve advanced multi-fueled, high electrical-to-thermal ratio equipment, and low-voltage direct current energy conversion devices.

Implementation and Deployment: This subprogram transfers advanced energy-efficient industrial technologies resulting from completed and ongoing research and development, and other information, to the private sector. A major element of any research and development program is the rapid, effective dissemination of results to users, in this case to the appropriate industries. A system is used to monitor the programs on a regular basis to ensure that R&D results are quickly transmitted. The transfer of this new knowledge is accomplished through several information transfer activities, including publications, technical meetings, workshops and symposia. Through the Energy Analysis and Diagnostic Centers Program, energy audits are provided for small manufacturers. This subprogram also includes program-wide technical evaluation, analysis and planning support, the Small Business Innovative Research program, and the National Research Council annual program assessment.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY
(dollars in thousands)

LEAD TABLE

Industrial Energy Conservation

Activity	FY 1989 Actual	FY 1990 * Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base	
					Dollar	Percent
Waste Energy Reduction Operating Expenses	$ 11,150	$ 12,856	$ 12,856	$ 11,500	$ -1,356	-11%
Industrial Process Efficiency Operating Expenses	$ 9,350	$ 27,196	$ 27,196	$ 18,200	$ -8,996	-33%
Industrial Cogeneration Operating Expenses	$ 4,600	$ 5,073	$ 5,073	$ 4,100	$ -973	-19%
Implementation and Deployment Operating Expenses	$ 3,089	$ 3,560	$ 3,560	$ 4,200	$ +640	+18%
Program Direction Operating Expenses	$ 2,100	$ 2,181	$ 2,181	$ 2,100	$ -81	-4%
TOTAL	$ 30,289	$ 50,866	$ 50,866	$ 40,100	$ -10,766	-21%
Summary Operating Expenses	$ 30,289	$ 50,866	$ 50,866	$ 40,100	$ -10,766	-21%
Total Program	$ 30,289	$ 50,866	$ 50,866	$ 40,100	$ -10,766	-21%
Staffing (FTE's)	28	35	35	30		

*FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

Industrial Energy Conservation

FY 1990 Appropriation	$51,435
Adjustments	-569
FY 1991 Base	50,866
Waste Energy Reduction	
- Increased Combustion Efficiency	+ 159
- Decreased Recuperator Research	- 674
- Decreased Liquid/Solid Waste Conversion	-1,184
- Increased National Laboratory Support	+ 892
- Decreased Heat Pump Research	- 217
- Decreased Waste Stack Gas Research	- 332
Industrial Process Efficiency	
- Decreased Process Electrolysis Research	- 608
- Decreased Separations Research	- 474
- Decreased Sensors and Controls Research	- 487
- Decreased Materials Processing	-7,427

SUMMARY OF CHANGES

Industrial Energy Conservation (Cont.)

Industrial Cogeneration	
- Decreased Topping Cycle Research	- 478
- Decreased Thermal to Electrical Energy Conversion Research	- 495
Implementation and Deployment	
- Decreased Technical Evaluation, Analysis, and Planning	- 50
- Increased Energy Analysis and Diagnostic Centers	+ 689
- Increased Technology Transfer	+ 1
Program Direction	- 81
FY 1991 Congressional Budget Request	$40,100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

INDUSTRIAL ENERGY CONSERVATION

I. Preface: Waste Energy Reduction

The objective of the Waste Energy Reduction subprogram is to recover energy contained in industrial waste streams and waste materials, and to more efficiently utilize the energy content of fuels. Research and development activities are supported in three areas: improved combustion efficiency, waste heat recovery and industrial waste utilization. A fourth activity--national laboratory support--provides technical monitoring for the total industrial conservation program.

Cost sharing by the private sector is an integral part of the Waste Energy Reduction subprogram and represents a leveraging of the Federal funds in carrying out the research and development activities. This cost sharing has been averaging about 25%, and it is estimated that this level will continue in FY 1991.

- Combustion Efficiency: Although combustion efficiencies presently range up to 80 percent, depending on process and system design, there is a need for technology to further improve the efficiency of fuel conversion to thermal energy, and more importantly, to improve the heat transfer to the product. There is also a need for improved combustors to provide flexibility of fuel choice in the industrial sector while meeting environmental requirements of furnaces, boilers, and process heaters. The objective of the combustion efficiency program is to provide new combustion systems, including those allowing use of low grade fuels, which are more energy efficient. These projects will generally provide energy saving results in the midterm, since implementation of the technology involves capital turnover.

- Waste Heat Recovery: The objective of the waste heat recovery program is to develop systems for the improved recovery of industrial waste heat at both high and low temperatures. New heat pump systems being developed could save 1 quad of low temperature process heat annually by integrating them strategically into the process cycle. These heat pump systems (chemical and magnetic) do not use CFC's, but achieve high temperature lifts (200°F) and improve performance by 30%. New high temperature ceramic heat exchangers and reactor vessels could save up to 2 quads of thermal energy each year that are presently lost to the environment. High temperature, high pressure reactor vessels will provide the chemical industry with a new class of vessel that can increase reaction rates and improve product throughput. These research and development activities on heat pumps and heat exchangers/reactors are long range programs.

- Industrial Waste Utilization: A variety of solid, liquid, and gaseous waste materials presenting serious environmental problems for industry could be recycled or converted into useful fuels or higher value products if economical conversion technologies were developed. The objective of this program activity is to convert these solid, liquid and gaseous wastes into valuable fuels, feedstocks, or products which utilize the embodied energy in the waste materials. In the liquids waste area a key project is the conversion of hydrocarbons in potato wastes to a biodegradable plastic. This will alleviate current landfill problems and provide a useful product from a waste material while substituting for a petroleum derived plastic. Significant projects in the waste solids area are the production of industrial adhesives from waste wood lignins and the potential use of activated waste tire rubber and polyethylene as a feedstock for molded elastomeric products. These projects would substitute waste products for petroleum feedstocks while saving significant energy. Gaseous industrial wastes offer additional areas for energy saving through the capture and use of hydrogen sulfide and silicon monoxide. Current projects in this area have the potential to contribute about 2 quads of energy savings annually.

I. Waste Energy Reduction (Cont'd)

- National Laboratory technical support for the entire industrial conservation program is also included in this activity.

II. A. Summary Table: Waste Energy Reduction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Improved Combustion Efficiency..................	$ 1,500	$ 1,341	$ 1,500	+ 12
Advanced Industrial Heat Pumps..................	1,550	2,117	1,900	- 10
Advanced High Temperature Recuperators..........	2,200	2,874	2,200	- 23
Liquid Gaseous/Solid Waste Conversion...........	1,800	2,984	1,800	- 40
Utilization of Waste Stack Gas..................	1,300	1,632	1,300	- 20
National Laboratory Support.....................	2,800	1,908	2,800	+ 47
Total, Waste Energy Reduction	$ 11,150	$ 12,856	$ 11,500	- 11

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 1,450	$ 2,090	$ 1,500	- 28
Idaho National Engineering Laboratory - EG&G	$ 3,150	$ 1,624	$ 2,425	+ 49
Oak Ridge National Laboratory	$ 800	$ 1,275	$ 575	- 55
Pacific Northwest Laboratory	$ 0	$ 100	$ 0	-100
Solar Energy Research Institute	$ 450	$ 545	$ 700	+ 28

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Waste Energy Reduction			
Improved Combustion Efficiency	Complete development tests on an oxygen-enriched combustion system that decreases fuel use ir industrial furnaces.		
	Continue development of a furnace control sensor that decreases the present "over-heating" practice by measuring the internal temperature of the work piece.	Construct a laboratory test unit to confirm the ability to sense work piece internal temperature. A full scale control sensor "bread board" test unit will be assembled. Prepare software and controller systems for test unit.	Initiate laboratory tests to confirm design predictions.
		Design and fabricate an experimental, natural gas fired, burner unit for tests. This is to be of a new "porous" ceramic that heats primarily by radiation and is more efficient than present commercial units.	Identify and obtain the services of an existing combustion test facility for new burner. It may be a commercial, academic or institutional or other type of installation. Install the porous ceramic burner in this facility, in preparation for subsequent test.
		Design and fabricate an experimental gas recirculation system for better heat transfer to the load and better control of emissions.	

III. **Waste Energy Reduction** (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Improved Combustion Efficiency (Cont'd)	Initiate laboratory testing of a supercritical wet oxidation combustion system that will use low grade fuels (peat) and industrial wastes (food residue, pharmaceutical, sawdust) as fuels. Initiate design of a pilot scale wet oxidation development unit for later testing in an industrial host site.	Fabricate a pilot scale (2 tons per day) supercritical wet oxidation unit and initiate testing in an industrial host site.	Complete testing of the pilot scale unit. Design a full scale prototype supercritical wet oxidation unit for installation in a processing plant. Initiate fabrication of a full scale prototype wet oxidation unit. Confirm the design of reactor internal details by further testing.
		Initiate engineering studies on advanced combustion systems in the glass & metals industries.	Complete engineering studies on advanced combustion systems, design laboratory test units.
	(Union Carbide, Stone & Webster, Babcock Wilcox, Surface Combustion, Acurex)	(Stone & Webster, Modell, Air Products, Surface Combustion)	(Stone & Webster, Modell, Air Products, Surface Combustion)
	$ 1.500	$ 1.341	$ 1.500
Advanced Industrial Heat Pumps	Initiate design of industrial heat pump units for which placement in the process is chosen by the new "Pinch" analysis method which will make their performance effective.	Select host sites for actual installations of advanced industrial heat pumps. Initiate site designs.	Complete designs and initiate fabrication.
	Initiate fabrication of a laboratory scale magnetic heat pump (refrigerator) and conduct laboratory testing. This unit will use state-of-the-art superconducting magnets.	Complete laboratory testing of a magnetic refrigerator, its components & special materials that will be used for hydrogen liquifaction.	Prepare detailed design of prototype magnetic refrigerator to make one ton per day of liquid hydrogen at an industrial plant. This unit will make liquid hydrogen with greatly decreased electricity requirements at the point of use.
	Fabricate Brayton cycle devices to capture volatile organic compounds (CFC's & solvents) including a small data capturing device and a subsequent full size unit for a tape manufacturing plant.	Continue fabrication of the full size solvent recovery unit for installation in a tape manufacturing plant. Prepare an installation design for the specific host site.	Operate the small data capturing unit in a number of sites for further design data. Initiate installation of the full size unit.

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Industrial Heat Pumps (Cont'd)	Continued liquid-vapor working fluid evaluation for absorption chemical heat pump use.	Competitive solicitation of a contractor to fabricate a full scale prototype liquid-vapor absorption chemical heat pump.	Initiate tests of prototype liquid-vapor unit.
		Prepare the preliminary design of a high temperature solid-vapor, heat of reaction, chemical heat pump that provides higher capacity and higher temperature lift than present commercial units.	Competitive solicitation of a contractor to fabricate prototype of a solid-vapor high temperature chemical heat pump.
	Start second phase R&D of silicon monoxide project to determine feasibility of a pressurized closed furnace configuration. Complete integrated silicon monoxide pressurized furnace experiments.	(ORNL, Astronautics, 3M, Litwin, Linnhof-March, Southern Co. ETI, Georgia Power, TBD)	(Astronautics, Litwin, Linnhof-March, TBD)
	$ 1,950	$ 2,117	$ 1,900
Advanced High Temperature Recuperators	Perform design studies on high pressure composite ceramic heat exchangers that will allow greatly increased production capacity in process industries and greater fuel efficiency in gas turbines.	Initiate research on key aspects of high pressure composite ceramic heat exchangers and chemical process reactor vessels as determined necessary during the prior design studies. Fabricate selected composite ceramics to metal seals; conduct laboratory tests.	Design reactor internal components for prototype steam reforming and ammonia synthesis and fabricate test unit. Accomplish design studies on decreasing composite ceramic component porosity by improved manufacturing methods.
	Evaluate fiber architecture for achieving the best properties for ceramic composites, including both matrix types and geometry.	Continue evaluation of fiber architecture for ceramic composites	Determine limitations on design due to stiffness and properties of fiber architecture.
	Complete evaluation of flaw detection techniques in monolithic ceramics so quality of final products can be improved.		

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Advanced High Temperature Recuperators (Cont'd)		Initiate design modifications for monolithic nondestructive evaluation equipment to make it satisfactory for ceramic composites.	Fabricate "breadboard" units previously developed for testing of monolithic ceramics to determine applicability of test equipment to ceramics composites.
			Investigate strength limiting flaw detection techniques such as time of flight microscopy and computer aided tomography for ceramic composites.
	Conduct field tests of corrosion and fouling probes for determining heat transfer degradation.	Continue field tests at industrial sites of fouling and corrosion probes. Design & initiate fabrication of new high temperature-high pressure ceramic covered probes for use in chemical reactor vessels.	Complete fabrication & initiate tests with ceramic covered corrosion and fouling probes.
	Perform industrial field tests of composite materials exposed to corrosive environments to determine effect on strength of materials.		
		Select testing methods and characterize continous fiber ceramic composite materials; determine feasibilities. Various processes for producing composites.	Evaluate coatings for the ceramic composites. Continue process feasibility examinations. Initiate industrial hygiene epidemiological studies. evaluate micromechanics of these new composite materials.
	(B&W. ORNL. INEL.)	(B&W. ORNL. INEL. TBD. Stone & Webster. Drexel Univ.)	(TBD & B&W)
	$ 2.200	$ 2.874	$ 2.200

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Liquid Gaseous/Solid Waste Conversion	Continue tests of cheese whey conversion to ethanol and other higher value products using an immobilized-cell reactor system with CO2 stripping of ethanol. Testing of 30" pilot reactor at dairy completed.	Test reactor performance on sweet cheese whey. Complete testing of ethanol recovery process from CO2 and H2O vapor mix. Complete projections of process economics. Complete thermophilic, flavoring, and chemicals exploratory work. Complete carbon adsorption ethanol separation. Final report.	Monitor industrial scale-up of reactor to 48" unit. Monitor tests of unit after construction complete.
	Continue development of a process to convert potato wastes to biodegradable plastics. Complete initial process patent applications and invention reports. Sign interagency agreement with Tennessee Valley Authority on time-release fertilizer applications research.	Complete invention report and patent application. Start industrial consortium funding for lactic acid/plastic process development. Bench test two lactic acid separation systems and analyze purity for plastics production. Investigate use of bio/photodegradable plastics for packaging, mulches, and disposal bags. Accomplish accelerated plastics tests for degradability and physical-mechanical properties. Conduct tests at Tennessee Valley Authority on fertilizer applications.	Test at least two applications of the lactic acid fermentation system at plant sites, with downstream separation tests done at lab scale. Field test several samples of degradable plastics under outdoor conditions in dry and wet environments. Perform design and and cost analysis for a larger onsite pilot scale facility at a potato processing plant. Improve lactic acid strains using recombinant gene techniques if improvements of yield by conventional fermentation are unsatisfactory.
	Continue testing of phenolic adhesives derived from waste wood lignins for use in wood products. Produce test resins for adhesive formulations at pilot scale. Complete formation of consortium with industry.	Produce pilot scale (5 kg) southern pine-based resins for test in various applications by 3-member consortium. Fractionate initial samples of pyrolysis oils obtained from commercial reactors; test adhesive formulations. Conduct tests at three sites on resols using 2 x 2 ft plywood samples. Ship sample of resin for veneer adhesive feasibility test. Optimize extraction system.	Conduct test on Douglas fir as second pyrolysis feedstock. Test further promising resol formulations of resin at industrial sites using 2 x 2 ft plywood samples. Test catalysts for shift activity at pyrolysis film interface in vortex reactor.
	Start lab research to chemically activate ground waste tire rubber using reactive gases and pretreatment solvent processes.	Achieve high strength bond between activated rubber and polyurethane. Start product applications development. Update the economic and energy benefit analysis.	Accomplish lab scale molding of new waste-tire/polymer composites with superior mechanical properties. Identify product applications.

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Liquid Gaseous/Solid Waste Conversion (Cont'd)	Complete basic electrochemical studies and bench scale batch testing to confirm technical and economic feasibility of the one-step dezincing process.	Complete 1,000 pound batch dezincing tests with slitter scrap and stamping scrap, both loose and baled.	Establish technical and economic feasibility of dezincing auto shredder scrap steel at the 1,000 pound batch scale. Start design of the 25 tons per day continuous pilot plant.
	Complete testing of the effects of low levels of antimony on the mechanical properties of secondary aluminum.	Examine alternative procedures to remove antimony, including degassing and filtering, as a supplement to the separation of parts.	Develop the closed degassing system for antimony removal. Update the economic and energy benefit analysis. Determine the feasibility of recovering aluminum and fluxes from secondary aluminum smelter salt cake. Examine the feasibility of integrating secondary lead recovery from batteries with primary smelting operations.
		Complete preliminary evaluation of processes to recover marketable materials from auto shredder residue (ASR); start bench testing.	Re-evaluate the economics of alternative processes for recovery of values from ASR; select the most promising one.
	Complete manufacturing run of roofing shingles with up to 20% recycled factory roofing waste. Start evaluation tests.	Install roofing shingles made with 0 to 20% recycled factory waste, on houses. Start lab research on field waste to develop methods to remove nails.	Plan field roofing waste recycling run in a factory.
	Start lab scale batch testing of the Low Temperature Catalytic Gasifier with high moisture content industrial wastes.	Extend the life of the catalyst through materials development. Evaluate lower cost reactor materials. Start systems development to improve the accuracy of the capital cost projections.	Complete preliminary design of a one ton per hour gasifier system with heat recovery. Update the economic and energy benefit analysis.
	Complete two studies on mixed waste plastics: quantities, sources, characterization and tertiary conversion processes.		Based on competitive solicitation initiate R&D to convert mixed waste plastics to high value chemicals or liquid fuels.
		Determine liquid/solid waste quantities, types and processes from current and previous EADC industrial sites.	

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Liquid Gaseous/Solid Waste Conversion (Cont'd)	(Purdue, ANL, SERI, Air Products & Chemicals, Manville-Bird, PNL, ORNL)	(Purdue, ANL, SERI, Air Products & Chemicals, Manville-Bird, PNL, TBD, UCSC)	(Purdue, ANL, SERI, Air Products & Chemicals, Manville-Bird, PNL, TBD)
	$ 1,800	$ 2,984	$ 1,800
Utilization of Waste Stack Gas	Start second phase R&D of silicon monoxide project to determine feasibility of a pressurized closed furnace configuration. Complete integrated silicon monoxide pressurized furnace experiments.	Complete pressurized furnace feedstock tests. Start 1/10 scale arc/plasma proof of concept task.	
	Continue investigation on feasibility of hydrogen and sulfur recovery at lab scale, using industrial hydrogen sulfide. Update economic evaluation of system.	Complete feasibility investigation. Develop improved plasma reactor and determine effect of microwave frequencies on economics. Start engineering development scaleup.	
	Complete lab testing of UV dual curing coatings with reduced emissions. Update economics and energy savings.	Start engineering development. Determine specific coatings for additional tests and evaluate test results. Evaluate scaleup of coatings manufacturing technology.	Complete engineering development. Start full scale application tests.
		Start industry-supported laboratory testing of biotechnology and other technologies for recovering industrial gaseous waste based on responses to competitive solicitation.	Complete laboratory tests and start technology development.
		Determine gaseous waste quantities, types, and processes from current and previous EADC sites.	
	(Dow Corning, ANL, 3M)	(Dow Corning, ANL, 3M, UCSC, TBD)	(ANL, 3M, TBD)
	$ 1,300	$ 1,632	$ 1,300

III. Waste Energy Reduction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
National Laboratory Support	Project management support and technical monitoring at National Laboratories for total IP program.	Project management support and technical monitoring at National Laboratories for total IP program.	Project management support and technical monitoring at National Laboratories for total IP program.
	$ 2.800	$ 1.908	$ 2.800
Waste Energy Reduction	$ 11.150	$ 12.056	$ 11.900

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

INDUSTRIAL ENERGY CONSERVATION

I. Preface: Industrial Process Efficiency

The objective of the Industrial Process Efficiency subprogram is to improve energy efficiency and productivity in the most energy-intensive industrial sectors of the U.S. economy. Its purpose is to reduce the technical and/or economic risks that prevent industry from investing in more efficient processes and technologies. The research activities are pursued within generic areas, namely, process electrolysis, Metals Initiative, materials processing, sensors and control systems, and separations systems. Most projects are cost-shared by industry. The average level of cost-sharing in this sub-program area has been 22%. This level is projected to increase, as cost-sharing for all future Metals Initiative projects must be at least 30%.

- Process Electrolysis: Products such as aluminum, magnesium, chromium, manganese and chlorine are manufactured using energy-intensive electrolytic reduction processes. Electrolysis requires more than 1.1 quads of energy annually to reduce alumina and magnesia and to produce chlorine, with energy use efficiencies typically less than 50 percent. The objective of this program is to significantly improve the efficiency of electrolytic reduction processes through improved anode and cathode materials and cell configurations, to save a projected 0.4 quad of energy by the year 2000. This program will contribute to the Department's goals of energy security and competitiveness in the mid-term.

- Metals Initiative: The Metals Initiative research is directed at new technologies that will "leapfrog" the present state of the art in metals processing, primarily steel, aluminum, and copper, to put U.S. industries in a more competitive position worldwide. Three major steel projects funded by this initiative are underway, aimed at direct reduction of iron ores, development of superplastic steel and near net shape casting of low carbon steel sheet. A potential for energy savings of 0.45 quads annually is associated with these projects in the long term, after 2005.

- Materials Processing: The objective of the work in this activity area is development of technologies for reducing energy consumption and increasing productivity in the processing of major basic products and materials. Current R&D is directed toward technologies in foundry operations, improved refractories for steel and glass melting furnaces, cupola process models, and glass processing. These are mid-term projects which are expected to save 0.1 quad by 2005.

- Sensors and Controls: Energy and process efficiency are greatly enhanced through the use of automatic process control systems. As the pulp and paper, steel, food processing, textile and other industries implement improved systems for automatic process control, they have found the lack of accurate, on-line sensors to measure process parameters to be a serious hindrance. A major limitation is the lack of sensors which will operate in the environmental extremes of many industrial processes. In cooperation with industry, DOE has initiated programs designed to meet some of the needs for sensors. The program's objective is to help reduce industrial process energy use by 3% by the year 2005 and contribute to the Department's goals in the mid and long-term.

- Separations Systems: A critical and energy-intensive step in many industrial processes is the separation/concentration of the components of a solution or mixture. Unit operations to make separations are often the most energy-consuming at any manufacturing site; they are typically accomplished through thermal evaporation, distillation or drying. Estimates place annual industrial energy consumption for evaporation and distillation alone at 2.6 quads. The objective of this program is to develop alternative technologies which can be used to perform the required operations but are intrinsically less energy-intensive. Such methods include membrane separations; continuous chromatography; freeze concentration; advanced drying concepts and others. Engineering development and process research work are required to achieve the projected savings of 0.34 quad per year by 1995, thus contributing to the Department's goals of energy security and competitiveness in the near and mid-term periods.

II. A. Summary Table: Industrial Process Efficiency

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Process Electrolysis	$ 1,800	$ 2,108	$ 1,500	- 29
Materials Processing	1,000	17,327	9,900	- 43
Sensors and Controls	2,900	2,587	2,100	- 19
Separations Research	3,650	5,174	4,700	- 9
Total, Industrial Process Efficiency	$ 9,350	$ 27,196	$ 18,200	- 33

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 44	$ 0	$ 0	0
Idaho National Engineering Laboratory - EG&G	$ 1,999	$ 2,952	$ 1,925	- 35
Oak Ridge National Laboratory	$ 310	$ 332	$ 0	-100
Pacific Northwest Laboratory	$ 1,160	$ 760	$ 250	- 67
Solar Energy Research Institute	$ 350	$ 225	$ 0	-100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Industrial Process Efficiency			
Process Electrolysis	Begin experiments to determine the relationship between operating conditions, wear rates and voltage drop for cerium oxide coated cermets, based on 100 hour bench tests.	Complete the determination of the relationships between operating conditions, wear rates and voltage drop for the cerium oxide coated cermets based on 100 hour bench tests and a pilot cell test.	
	Continue 20 ampere cell runs to determine effects of impurities, alumina level, voltage and other variables on cell operation with cermet anodes.	Complete electrochemical analysis of the cermet/bath interface coating.	
	Complete water modeling of an advanced cell design.		
	Complete Phase I of a low temperature alumina reduction cell using high surface area anodes.	Initiate and complete Phase II testing of a low temperature bath in a 3,000 ampere cell using high surface area cermet anodes.	
	Complete an initial test of nickel oxide-nickel ferrite-copper cermet anode materials in a 6,000 ampere pilot cell.		Initiate long term tests of nickel oxide-nickel ferrite-copper cermet materials in a 6,000 ampere pilot cell.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Process Electrolysis (Cont'd)		Initiate the development of fabrication methods for inert anodes.	Complete the development of fabrication methods for inert anodes.
	Complete pilot scale tests of titanium diboride-graphite cathode materials. Develop a heat balance for cells using titanium diboride-graphite cathode materials and identify needed instrumentation.		
		Develop thermal models of cell designs retrofitted with new anode/cathode materials. The models will determine optimum electrode configurations, sidewall design etc. prior to testing new materials in commercial cells.	
		Initiate new projects in process electrolysis in response to solicitation and unsolicited proposals.	Continue projects begun in FY 1990 in response to solicitation and unsolicited proposals.
	(El Tech, PNL, Univ. of Cal, Alcoa, Reynolds, GLRC, TBD)	(El Tech, PNL, Reynolds, GLRC, TBD)	(TBD)
	$ 1,800	$ 2,100	$ 1,900
Materials Processing	Initiate foundry industry projects on casting modeling, cupola process model and evaporative pattern casting (EPC) begun in response to a solicitation. Develop mathematical model of cupola process and determine factors affecting dimensional control of EPC castings.		Initiate Phase II of projects to: develop an on-line cupola process control system; and improve evaporative pattern casting process.
	Complete initial phase of projects on light weight refractories and high temperature fiber refractories. Determine promising approaches through bench-scale tests.		Initiate Phase II scale-up of preferred light weight aggregate and high temperature fiber refractory projects.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials Processing (Cont'd)	Initiate project on development of a rapid glass refiner.	Complete the validation phase for the rapid removal of bubbles from liquid glass.	
	Complete Phase I feasibility testing of arc-shattering concept for comminution applications.	Initiate pilot scale testing to determine operating parameters.	Complete pilot scale testing of arc-shattering concept for comminution applications.
	Complete Phase I feasibility of advanced classification comminution system.		Complete pilot-scale testing of advanced classification comminution system.
	METALS INITIATIVE		
	Complete Phase I of Steel Initiative project on super-plastic steel begun in FY 1988. Initiate the steel spray forming project. This work concentrated on alternative nozzle designs. Initiate the direct steelmaking project, including smelter design and engineering, university-based modeling efforts, and construction of 5-7 ton per hour pilot smelter.	Continue the spray forming project; work will include nozzle optimization, implementation of real-time diagnostics, and conceptual Phase II system design. Complete the construction of the direct steelmaking pilot smelting plant begun in FY 1989; conduct initial trials with a pilot smelter and conduct post-combustion tests in a commercial steelmaking furnace; continue modeling effort. Initiate Phase II of the super-plastic steel project. Initiate new Metals Initiative projects in response to unsolicited proposals and solicitations in areas identified in the Metals Initiative Research Plan.	Complete the bench scale development (Phase I) of the steel spray forming project initiated in FY 1989. Initiate the pilot-scale development (Phase II) of the steel spray forming project. Continue the direct steelmaking project started in FY 1989. Complete pilot smelter trials, laboratory heat transfer and post combustion studies and modeling; initiate techno-economic analysis. Complete Phase II of the super-plastic steel project. Continue other projects begun in FY 1990.
	(LLNL, INEL, ORNL, MIT, AISI, ANL, AFS, Alcoa, Manville, Vortec, Pulse Sciences, Appoor)	(Vortec, LLNL, ORNL, MIT, INEL, AISI, Pulse Sciences, TBD)	(AFS, Alcoa, Manville, LLNL, ORNL, MIT, AISI, Pulse Sciences, Appoor, TBD)

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials Processing (Cont'd)	$ 1,000	$ 17,327	$ 9,900
Sensors and Controls	Initiate development of the digital signal analysis (DSA) algorithm for aluminum reduction cell control.	Complete the DSA algorithm and test validity.	Fabricate and test prototype DSA alumina control system in a pilot cell.
	Complete fabrication of the prototype on-line chemical composition analyzer for improved distillation control.	Complete industrial testing and performance verification of the chemical composition analyzer. Complete an economic benefit analysis.	
	Test a prototype pulp consistency sensor with laboratory flow loop tests. Verify results in tests at an independent lab. Define the process control mechanism in preparation for a production mill test.		Modify and develop consistency sensor for higher fiber content (35%). Conduct production mill testing.
	Conduct proof-of-concept testing of the pulp consistency sensor for conventional Kraft pulp refining and thermo-mechanical pulping.		
	For particle size distribution sensor, test effects of particle concentration, entrained air, pressure and ionic strength on ultrasonic transmission. Develop a new transducer.	Complete the final production line test and evaluation of a particle size distribution sensor for paint pigments and other chemicals.	
	Initiate R&D of an on-line, in-situ, sensor for measuring lignin in wood pulp based on UV fluorescence. Accomplish concept development, prototype fabrication and lab tests.	Characterize UV fluorescence. Modify the prototype for mill tests. Conduct the mill tests.	Complete mill tests with UV fluorescence sensor for measuring lignin in wood pulp.
			Initiate R&D of an on-line viscosity sensor for improved pulp mill bleaching.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Sensors and Controls (Cont'd)			Initiate R&D of an advanced on-line process control system for Kraft pulping digester control.
	Continue development and field testing of a soil contact sensor to determine nitrate levels for real-time control of fertilizer application.		
	Initiate research on an integrated optic sensor for monitoring nitrogen level and transfer in agriculture cropping systems, based on ammonia levels above the soil.	Start field testing of integrated optic sensor.	Complete integrated optic sensor field tests. Concurrently evaluate alternative management strategies for improving fertilizer nitrogen use efficiency.
	Complete development of prototype hydrogen transient nuclear magnetic resonance (HTNMR) sensor for measuring moisture content during drying of agricultural and food products.	Complete industrial testing of HTNMR sensor. Complete an economic benefit analysis.	
	Complete laboratory development of a control system for on-machine measurement of paper properties.	Initiate testing of on-machine sensor and control system for paper properties in an operating plant.	Complete economic benefit analysis.
	Complete research on a non-contacting optically-based thermal analysis system for glass melting.		
	Initiate feasibility study to assess impact of improved temperature sensors for food processing.	Complete sonic temperature sensor feasibility study, and begin prototype development and lab testing.	Complete lab and industrial testing of sonic sensor.
	Initiate development of an nuclear magnetic resonance (NMR) crop ripeness sensor for non-destructive grading of fruit.	Continue the development of a nondestructive sensor to determine sucrose content of fruit.	Complete industrial field tests for the NMR food ripeness sensor.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Sensors and Controls (Cont'd)			Issue competitive solicitation on Needs in Food Processing for On-Line Sensors, based on National Food Processors Association study. Based on solicitation results, fund proposals for improved on-line sensors.
	Initiate work to develop a planar wave guide sensor for chemical composition measurement. Fabricate and test breadboard.	Develop and test pre-production prototype utilizing light from the visible spectrum. Evaluate several coatings.	
			Initiate development of on-line sensors for commercial magnesium cells.
	(IPST, EER, PNL, Univ. of Tenn., Lasentec, PonBam, B&W, Aguila, Georgia Tech, SWRI Norty, INEL, Purdue)	(PNL, Georgia Tech, SWRI, IPST, Univ. of Tenn., PonBam, B&W, INEL, Purdue)	(Georgia Tech, B&W, PNL, Lasentec, Norty, IPST, INEL, Purdue, TBD)
	$ 2,900	$ 2,587	$ 2,100
Separations Research	Construct and initiate lab testing of process development unit for separation of organic/water mixtures at temperatures up to 212 degrees F with new hollow-fiber ion-exchange membranes.	Complete field testing of at least three organic/water mixtures, e.g., chloro-organic/water, dioxane/water.	
	Complete development of guidelines for analyzing and optimizing energy utilization by means of hybrid membrane systems.	Initiate a solicitation for the development of hybrid membrane systems that can be retrofitted to complement existing separation processes, membrane and/or integrated membrane systems.	Based on solicitation results, commence development of a membrane hybrid system.
	Begin research to reduce fouling of membrane separation surfaces through introduction of piezoelectric activity.	Complete laboratory testing of piezoelectrically active membranes.	Complete pilot plant testing of piezoelectric membranes.
	Complete research to reduce fouling of membrane separation surfaces through fluorination.		

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Separations Research (Cont'd)	Initiate development of membranes that chemically transport specific substances across the membrane to achieve higher yields and improved selectivity.	Fabricate commercial scale membrane modules. Conduct flow tests, and provide system analysis.	Build and test pilot plant system for separation of ammonia from hydrogen, nitrogen, and ammonia mixtures.
		Initiate R&D on mono-layer deposited on the surface of membranes to reduce fouling.	Continue studies to apply mono-layer films to membranes to reduce fouling.
	Continue development of polyphosphazene membranes: cast membranes onto ceramic supports and test for adhesion, flux and selectivity.	Select and complete tests of polyphosphazene membranes in two high temperature industrial applications.	Build and test pilot plant unit.
	Evaluate and test existing ceramic membranes, modules and catalysts for combining into a single-system, catalytic reactor to separate organic compounds at higher temperature and efficiency.	Synthesize selected catalysts and membranes, and construct test reactor. Initiate testing for dehydrogenation of ethylbenzene to styrene.	Complete ethylbenzene to styrene laboratory test. Install a prototype unit in an industrial facility for long-term evaluation.
		Complete the development of new generation ultrafiltration ceramic membranes based on the technique of sol-gel chemistry; development was started in FY 1986.	
			Fabricate and field test membrane system to sweeten natural gas.
	Continue Kraft black liquor (BL) gasification research, including process design, refractory testing and sulfur scrubbing. Design, fabricate & initiate testing of 6 tons per day pulsed combustion gasifier.		Test and evaluate 6 tons per day pulsed combustion gasifier at several pulp and paper mills.

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III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Separations Research (Cont'd)	Develop and test analytical methods for determining sulfide and sodium in black liquor (BL) by ion selective electrode techniques. Assemble & test digester and evaporator. Complete total enthalpy concentration techniques.	Develop heat of combustion experimental procedures; collect data on various BL species from 65 to 100% solids. Identify heats of mixing techniques and collect data. Complete data collection for eight liquors at 65% solids.	Complete development of physical property data (shear rate, glass transition, heat capacity, freezing point depression, boiling point rise, etc.).
	Modify and test BL char bed reactor to verify combustion temperature retention ability. Use laser and fiber optics for accurate measurements of BL fume.	Initiate verification of computer model for optimal control of black liquor recovery boiler.	Continue verification of the computer model to the point it can be used by industry.
	Investigate characteristics of BL spray nozzles, concentrating on flow, pressure drop and viscosity. Test splash-plate, swirl cone and V-type nozzles. Use high speed video recordings to analyze flow characteristics. Conduct mill trials to verify laboratory data.	Conduct image analysis of BL data on spray size distribution. Analyze liquid sheet breakup.	Initiate program for redesign of BL delivery nozzles.
	Initiate research to identify a catalyst for efficient extraction of pulp from wood and black liquors. Continue research to evaluate the effect of a quinone to speed paper pulping process. Issue an interim report on economics.	Complete research on quinone pulping with different raw materials to optimize wood yields in processes producing pulping liquors. Incorporate environmental considerations into more detailed economic evaluations.	
		Complete a feasibility investigation of drying in a superheated steam atmosphere with exhaust recompression. Initiate development of a pilot-plant system.	Complete development of pilot-plant process.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Separations Research (Cont'd)		Continue testing of electroacoustic dewatering press for food streams eg. beet pulp and corn fiber.	
			Field test solid-on-solid processes for fabric printing and finishing, as a step in converting textiles manufacturing from wet to dry processing.
	Complete the study of the mechanism of water removal during food drying.		Based on solicitation results, initiate R&D projects for food drying processes.
	Design, assemble, test and evaluate a second nip on the lab roll impulse dryer prototype. Determine sheet surface qualities for newsprint, writing papers, light weight coated and corrugating medium. Investigate two-sided drying. Evaluate alternative roll materials to suppress delamination.	Determine solutions to delamination during impulse drying of heavy-weight grades. Investigate sheet properties to establish uniformity of commercial paper when dried on both sides.	Complete testing and evaluations of impulse drying of paper.
	Develop fundamentals of freeze concentration technology in dairy industry applications.	Initiate pilot plant studies to obtain fundamental data on freeze concentration in dairy applications.	Complete freeze concentration pilot plant studies, and market analysis.
	Continue developing iron aluminides for use in molten salt chemical air separation system. Determine preferred composition, develop thermomechanical processing maps, determine corrosion resistance and mechanical properties.	Produce materials to provide test parts for air separation corrosion unit.	
			Complete testing of industrial-size continuous annular chromatography unit for sugar and pharmaceuticals separations.

III. Industrial Process Efficiency (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Separations Research (Cont'd)		Initiate research on an energy efficient high capacity gas/liquid contacting device for improved distillations in the oil and chemicals industries.	
			Initiate program for enzymatic production of chemicals using feedstocks derived from petroleum.
		Complete laboratory studies on supercritical water oxidation of pulp and paper mill waste sludges.	
	(SUNY, GRI-I, Allied/Signal, INEL, Alcoa, DRINC, Georgia Tech, Purdue, ORNL, IPST, ERI, Univ. Florida, MTCI, SERI, GRI, Air Products)	(SUNY, GRI-I, DRINC, INEL, Georgia Tech, ORNL, IPST, SERI, Univ. Florida, Air Products, Alcoa, Univ. Wisconsin, Tecogen, Battelle, Univ. Texas, Modell, TBD)	(GRI-I, Georgia Tech, DRINC, Alcoa, Univ. of Florida, MTCI, ORNL, Air Products, IPST, Univ. Florida, INEL, Tecogen, DRINC, TBD)
	$ 3,650	$ 5,174	$ 4,700
Industrial Process Efficiency	$ 9,350	$ 27,196	$ 18,300

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

INDUSTRIAL ENERGY CONSERVATION

I. Preface: Industrial Cogeneration

The objective of the Industrial Cogeneration subprogram is to jointly conduct research with industry on new, advanced energy conversion systems which offer energy efficiency and fuel flexibility options not available with present technologies. Industrial cogeneration has the potential to save almost 3 quads of primary energy by the year 2000. Research in this subprogram is defined within two activity areas: advanced topping cycle systems and direct conversion of thermal to electrical energy. Industry cost share for the industrial cogeneration subprogram is projected to continue at its current level of approximately 30%.

o **Advanced Topping Cycle Systems:** Increased use of industrial cogeneration can be achieved through development of higher electrical-to-thermal output ratio systems, as compared with conventional steam turbine systems. In addition, development of technologies which use coal as a fuel, burned in an environmentally acceptable manner, permit flexibility of fuel choice and enhance U.S. energy independence. The development of innovative cogeneration technologies such as an oxygen enriched diesel system; a small, high-efficiency gas turbine which is fired directly with wood and waste fuels; a coal fired Brayton system; and a high performance steam system will aid in realizing growth for industrial cogeneration to a total of 80,000 megawatts by the year 2000.

o **Conversion of Thermal Energy to Direct Current Electricity:** Direct conversion devices, such as the alkali metal thermal cell, may be able to cost-effectively meet some of industry's 5,000 megawatt requirement for relatively low voltage d.c. power, which can be used in electrolytic cells and other industrial processes. On-site direct conversion capability could save .05 quad annually in the year 2010.

The Advanced Topping Cycle Systems are midterm programs, with expected benefits of the new technologies to start accruing in the 1995-2000 time frame. The Direct Conversion Alkali Metal Cell, however, is a longer term program and industrial market penetration will probably start after the year 2005.

II. A. Summary Table: Industrial Cogeneration

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Advanced Topping Cycle Systems	$ 3,800	$ 4,278	$ 3,800	- 11
Thermal to Electrical Energy Conversion	800	795	300	- 62
Total, Industrial Cogeneration	$ 4,600	$ 5,073	$ 4,100	- 19

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 1,000	$ 662	$ 125	- 81

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Industrial Cogeneration			
Advanced Topping Cycle Systems	Complete tests on the coal-fired Brayton second test section. This system could provide large amounts of power with benign emissions.	Complete evaluation of test samples and data. Issue final report, and secure the test facility.	
	Complete high performance steam generator laboratory performance tests. Complete design of a steam generator and a high performance steam turbine. Order long lead items for a prototype high performance steam turbine, which will provide 70% more electricity per pound of steam than conventional steam turbines.	Fabricate prototype high performance 55,000 lb/hr steam generator.	Initiate fabrication of a high performance steam turbine. Complete update of the market potential assessment for high performance steam systems.
	Continue laboratory tests of a small gravel bed combustor-gas turbine system burning industrial waste & coal.	Initiate the design of a prototype 38 cm gravel bed combustor.	Complete the design of a prototype gravel bed combustor.
	Initiate laboratory testing of an oxygen- enriched single cylinder diesel engine to obtain performance data.	Complete a theoretical assessment, and single cylinder engine laboratory tests, to determine diesel engine performance using oxygen-enriched combustion air. An engine using this system is expected to provide 40% more power, at the same efficiency, with controlled nitrogen oxide emissions.	Expand laboratory testing to an oxygen-enriched multi-cylinder diesel, to obtain more complete performance data. Utilize an existing membrane device to obtain the enriched air for these tests.

III. Industrial Cogeneration (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Topping Cycle Systems (Cont'd)		Assess the use of ceramic components in stationary cogeneration gas turbines. Use of these materials will improve fuel efficiency by capitalizing on ceramic improvements developed by the Advanced Heat Exchanger Program and the Transportation Program.	Initiate the redesign of stationary gas turbine components based on substitution of ceramic components.
		Assess the performance changes required on cogenerator topping cycle units resulting from increased of power wheeling by industrial cogenerators. This requirement will result from higher capacity and load fators, more frequent stops and starts and more fuel use.	Initiate an engineering study on the required design changes for gas turbines, steam turbines and diesels when used in wheeling applications.
	(Rockwell, Westinghouse, Solar Turbines, Univ. of Wisconsin, ANL)	(ANL, Solar, Univ. of Wisconsin, Battelle)	(Solar, ANL, Allison, Univ. of Wisc. TBD)
	$ 3,800	$ 4,278	$ 3,800
Thermal to Electrical Energy Conversion	Continue development of sodium heat engine components and materials improvements. Evaluate modular grouping of cells for enhanced performance and reliability.	Continue development of the Beta alumina solid electrolyte for the sodium heat engine, to improve electric characteristics and electrode interface. Fabricate and test a more compact grouping of modular units. Prepare sintered Beta alumina laboratory test coupons. Investigate stronger shapes for the Beta alumina electrolyte.	Test ion implantation on the surface of the Beta alumina for improved toughness. Test alternative electromagnetic pumps for the sodium.
	(Ford)	(ORNL, ERIM, TBD, Northwestern Univ.)	(TBD)
	$ 800	$ 795	$ 300

III. Industrial Cogeneration (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Industrial Cogeneration	$ 4.600	$ 5.073	$ 4.100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

INDUSTRIAL ENERGY CONSERVATION

I. Preface: Implementation and Deployment

The Implementation and Deployment subprogram provides support for analytical and technology transfer activities related to the Industrial Programs research and development work; informational programs; and for other Departmental program needs such as the Small Business Innovative Research Program. The major categories of these efforts are Technical Evaluation, Analysis and Planning; Energy Analysis and Diagnostic Centers; and Technology and Information Transfer

o Technical Evaluation, Analysis, and Planning provides contractor support for the entire office. Special studies on R&D technology areas and research needs are carried out for program managers, as is quick-response analytical work. Reviews conducted by the National Materials Advisory Board of the National Research Council provide a critical and independent assessment of the Industrial Conservation Program by a panel of industry experts.

o Energy Analysis and Diagnostic Centers (EADC) Program. Participating universities provide energy audits for small and medium-sized manufacturers. The audits are conducted by engineering students. An increase of $1.0 million would begin expansion of the Energy Analysis and Diagnostic Center (EADC) program from the 13 schools in the program now to 40 schools by the year 2000. To date, recommendations resulting from EADC audits have resulted in cumulative energy savings valued at $501 million, as compared to a total program cost of less than $12 million. With this expansion, EADCs will eventually be able to serve all major industrial sectors throughout the United States.

o Technology and Information Transfer is a cooperative effort between government and industry to enhance industry awareness about the benefits of energy efficiency improvements and the cost effectiveness of investment in energy conservation. For a variety of reasons, an information gap often exists between the source of a technology and potential users. Significant energy savings are achievable if these gaps can be closed through an effective program of technology and information transfer. The major activities are workshops, seminars, publications and tracking of energy savings attributable to technologies developed by the program.

Workshops and Seminars: Support is provided for the conduct of workshops, seminars and technical symposia on industrial energy conservation. Support may be provided for events both initiated and cosponsored by the DOE. Activities will be conducted as opportunities arise, having as their objective more effective technology transfer and improved energy efficiency. Presentations on both specific technologies and general process improvements are made in cooperation with the major industrial trade associations and, as appropriate, national engineering and professional societies.

Publications: Preparation and dissemination of publications are an important aspect of technology transfer. Publications concerning new and underutilized energy efficiency technologies, with particular emphasis on those which have been developed with the assistance of the DOE, will produced and distributed. These publications cover not only specific technologies, but also address overall energy management for major industrial sectors.

I. Implementation and Deployment (Cont'd)

II. A. Summary Table: Implementation and Deployment

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Technical Evaluation, Analysis and Planning.....	$ 962	$ 950	$ 900	- 5
Energy Analysis and Diagnostic Centers..........	1,500	1,811	2,500	+ 38
Technology and Information Transfer.............	627	799	800	0
Total, Implementation and Deployment	$ 3,089	$ 3,560	$ 4,200	+ 18

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Pacific Northwest Laboratory	$ 200	$ 50	$ 100	+100
Solar Energy Research Institute	$ 100	$ 100	$ 120	+ 20

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Implementation and Deployment			
Technical Evaluation, Analysis and Planning	Provide necessary technical evaluation, analysis and planning support. (Energetics) $ 962	Provide technical evaluation, analysis and planning support. (Energetics) $ 950	Provide technical evaluation, analysis and planning support. (Energetics) $ 900
Energy Analysis and Diagnostic Centers	Conduct energy audits with participating universities. Fully implement automated audit information data base network. (UCSC) $ 1,500	Conduct energy audits with participating universities. (UCSC) $ 1,811	Participating universities continue to conduct energy audits for small and medium-sized manufacturing plants. Expand program to 19 Centers. (UCSC) $ 2,500
Technology and Information Transfer	Publish and distribute written materials describing DOE-developed technologies. Provide some support for critical workshops and seminars. (PNL, OSTI, SERI TBD) $ 627	Publish and distribute written materials describing DOE-developed technologies. Provide some support for critical workshops and seminars. (OSTI, SERI, PNL, NBC, TBD) $ 799	Publish and distribute technical reports on DOE-developed technologies. Provide some support for critical technical workshops and seminars. (OSTI, SERI, PNL, TBD) $ 800
Implementation and Deployment	$ 3,089	$ 3,560	$ 4,200

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

INDUSTRIAL ENERGY CONSERVATION

I. Preface: Program Direction

A total of 30 full time equivalent (FTE) positions are provided for headquarters management of the program. This represents an appropriate level of staffing required to maintain adequate program management and support.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction..................................	$ 2,100	$ 2,181	$ 2,100	- 4
Total, Program Direction	$ 2,100	$ 2,181	$ 2,100	- 4

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provide salaries, benefits and travel for 28 FTEs to manage Industrial Energy Conservation Programs.	Provide salaries, benefits and travel for 35 FTEs to manage Industrial Energy Conservation Programs.	Provide salaries, benefits and travel for 30 FTEs to manage Industrial Energy Conservation Programs.
	28.0 FTE $ 2,100	35.0 FTE $ 2,181	30.0 FTE $ 2,100
Program Direction	28.0 FTE $ 2,100	35.0 FTE $ 2,181	30.0 FTE $ 2,100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Obligations in thousands of dollars)

OBJECT CLASS SUMMARY

Industry

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent.....................	$1,574	$1,648	$1,582
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	157	165	158
11.9 Total personnel compensation...........	1,731	1,813	1,740
12.1 Civilian personnel benefits............	183	181	174
21.0 Travel and transportation of persons...	180	180	180
25.0 Other services.........................	28,195	48,692	38,006
31.0 Equipment..............................	0	0	0
32.0 Land & structures......................	0	0	0
Totals......................................	$30,289	$50,866	$40,100

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION

OVERVIEW

Transportation

The transportation sector used 21.9 quads of energy in 1988, the vast majority of which was in the form of oil. Transportation petroleum consumption was approximately 10 million barrels per day, which accounted for 63 percent of all petroleum consumed and 27 percent of all energy used in the United States. Most importantly, the transportation sector alone used 23 percent more oil than the U.S. produced in 1988.

The objective of the transportation conservation program is to improve energy efficiency and enhance the flexibility of fuel use options in transportation related technologies. Reductions in U.S. transportation oil use can enhance energy security, reduce oil imports and related trade payments to foreign countries, and enhance economic growth. The types of technologies being pursued under DOE sponsorship for new engines, new materials, and new fuels will help the U.S. motor vehicle industry become more competitive and will make a positive impact on the country's petroleum imbalance.

The specific goals in support of increasing fuel efficiency and of enhancing the flexibility of fuel use options of engines in transportation include:

- Developing advanced automotive and heavy-duty diesel engine technologies that demonstrate at least 30 percent improvement in fuel efficiency relative to conventional current production heat engines; capability of meeting emissions, safety, and noise standards; and competitive initial and life cycle costs when in production.

- Establishing a fundamental ceramic and advanced materials technology base to support the U.S. heat engine industry.

- Overcoming key technological barriers, particularly relating to energy storage, concerning private sector development of electric and hybrid vehicles.

- Encouraging the development of alternative technologies by providing industry with fundamental scientific information on the properties and behavioral characteristics of alternative transportation fuels.

R&D efforts are focused on automobiles and light trucks, which account for about 60 percent of transportation's petroleum use, and on the second largest petroleum consuming market--heavy trucks and buses. The size of petroleum use in the transportation sector and the importance of relatively small efficiency improvements on U.S. petroleum consumption is shown by the fact that a 10 percent reduction in gasoline use by automobiles and light trucks (achieved by efficiency improvements) would save about 11 billion gallons of gasoline. It is also possible to save petroleum by permitting the engine designers more flexibility with respect to the type of fuel for which the engines can be designed. Potential petroleum savings of 11 quads (35 percent via efficiency improvements and 65 percent via fuel substitutions) in the transportation sector are possible by the year 2010.

Although the technology development programs have been directly focused on efficiency improvements in the transportation sector, they indirectly have a beneficial impact on emissions and air quality. Transportation, partly because of its high reliance on petroleum fuels, contributes almost 75 percent of carbon monoxide emissions in the U.S., almost 50 percent of the nitrogen oxides, over 30 percent of the volatile organic compounds, and over 20 percent of the particulates. Since the transportation programs have as their objective either improvements in efficiency of at least 30 percent and/or substitution of petroleum-based fuels with less polluting alternative fuels, successful commercialization of the technologies under development could result in major reductions in emissions. Additionally, as in previous years this budget supports the performance of beneficial work for others activities performed on a reimbursable basis including costs associated with the use of facilities and staff resources.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY
(dollars in thousands)

LEAD TABLE

Transportation

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Vehicle Propulsion R&D Operating Expenses	$ 16,323	$ 17,385	$ 17,385	$ 11,400	$ -5,985	-34%
Alternative Fuels Utilization Operating Expenses	$ 2,147	$ 6,710	$ 6,710	$ 11,500	$ +4,790	+71%
Electric and Hybrid Vehicle R&D Operating Expenses	$ 13,833	$ 17,877	$ 17,677	$ 11,800	$ -5,877	-33%
Technology Assessment and Transfer Operating Expenses	$ 2,244	$ 2,275	$ 2,275	$ 1,800	$ -475	-21%
Advanced Materials Development Operating Expenses	$ 14,953	$ 14,636	$ 14,636	$ 14,000	$ -636	-4%
High Temperature Materials Laboratory Operating Expenses	$ 2,000	$ 2,275	$ 2,275	$ 2,800	$ +525	+23%
Capital Equipment Capital Equipment	$ 550	$ 1,717	$ 1,717	$ 1,000	$ -717	-42%

LEAD TABLE - Transportation (cont'd)

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Program Direction						
Operating Expenses	$ 2,280	$ 2,284	$ 2,284	$ 2,300	$ +16	+1%
TOTAL	$ 54,330	$ 64,959*	$ 64,959	$ 56,600	$ -8,359	-13%
Summary						
Operating Expenses	$ 53,780	$ 63,242	$ 63,242	$ 55,600	$ -7,642	-12%
Capital Equipment	550	1,717	1,717	1,000	-717	-42%
Total Program	$ 54,330	$ 64,959*	$ 64,959	$ 56,600	$ -8,359	-13%
Staffing (FTE's)	30	36	36	30		

*FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

Authorization:

- P.L. 93-577, "Federal Non-nuclear Energy Research and Development Act of 1974."
- P.L. 93-275, "Federal Energy Administration Act of 1974."
- P.L. 93-438, "Energy Reorganization Act of 1974."
- P.L. 94-163, "Energy Policy and Conservation Act."
- P.L. 94-413, "Electric and Hybrid Vehicle Research, Development and Demonstration Act of 1976."
- P.L. 95-91, "Department of Energy Organization Act."
- P.L. 95-238, "Department of Energy Authorizations for FY 1978."
- P.L. 96-512, "Methane Transportation Research, Development and Demonstration Act of 1980."
- P.L. 100-494, "Alternative Motor Fuels Act of 1988."

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

Transportation

FY 1990 Appropriation		$65,686
Adjustments	-	727
FY 1991 Base		64,959
Vehicle Propulsion R&D		
- Develop automotive gas turbine ceramic components with a single industry team	-	4,468
- Support decreased research and development activities involving adiabatic diesels	-	925
- Conclude investigations on reduction of CFCs in transportation systems	-	502
Alternative Fuels Utilization		
- Enhance alcohols and gaseous fuels research and development including investigations on alternative fuels contributions to global greenhouse gases	+	2,420
- Increase investigations of synthetic fuels/engines interactions including studies on fuel composition effects on emissions and performance	+	320
- Continue alternative motor fuels demonstrations as required in P.L. 100-494	+	2,050
Electric and Hybrid Vehicle R&D		
- Decrease research and development of batteries for electric vehicle applications to focus on the top three candidates	-	4,287
- Develop modularized advanced electric vehicle components	+	103
- Continue fuel cell/battery hybrid powered bus program; conclude advanced fuel cell research	-	1,616
- Conduct laboratory, track, and fleet test and evaluation of new technologies	-	66
- Provide management support at national laboratories	-	11
Technology Assessment and Transfer		
- Eliminate publication and distribution of the Gas Mileage Guide	-	602
- Increase technology assessments of new ideas and proposals	+	217

SUMMARY OF CHANGES

Transportation (Cont.)

Advanced Materials Development		
- Reduce activities on design methodology of structural ceramics for advanced heat engines	-	636
High Temperature Materials Laboratory		
- Support additional scientific staff at the six user centers	+	525
Capital Equipment		
- Purchase equipment needed to support research and development on advanced materials and high altitude emission testing of alternative fuels	+	311
- Delay acquisition of additional equipment for the High Temperature Materials Laboratory and the electric vehicle testing laboratory	-	1,028
Program Direction	+	16
FY 1991 Congressional Budget Request		$58,655

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Vehicle Propulsion R&D

The goal of the Vehicle Propulsion R&D program is to develop transportation heat engine technology through cost-shared contracts with industry that will lead to the introduction into the Nation's transportation fleet of advanced vehicle propulsion systems with significant improvements in fuel economy (25 to 30 percent), reduced emissions, and the capability to operate on a wide variety of fuels. Because of the size of petroleum use in the transportation sector, even small efficiency improvements have major impacts on both energy consumption and air pollution. Just a 10 percent reduction in gasoline use by automobiles and light trucks would save about 11 billion gallons of gasoline and be worth about $12 billion in lower motor fuel bills paid by vehicle users. Potential petroleum savings of 2.3 quads in the transportation sector are possible by the year 2010 assuming only 10 percent market penetration and not considering the savings through alternative fuels substitutions.

Cost sharing is sought in all industry contracts, and although the amount is normally related to the degree of risk involved in the research conducted, the average is 20 percent for vehicle propulsion R&D. This cost share only includes direct contributions to the contract statement of work, and does not include industry-related internal R&D or independent facilities/capital equipment expenditures which in many cases are significant.

For the near-term, activities are planned to transfer ceramic technology to industry for application to low temperature wear and corrosion resistant engine components, and to develop improved high temperature lubricating oils.

For the mid-term, the program is focused on commercialization of high efficiency, low emissions automotive gas turbine engines and heavy duty adiabatic diesel engines.

For the long-term, program activities are centered on transferring developed high temperature, high strength ceramic component technology to other transportation applications.

II. A. Summary Table: Vehicle Propulsion R&D

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Automotive Gas Turbine	$ 11,390	$ 11,868	$ 7,400	- 38
Automotive Stirling Engine	990	0	0	0
Heavy Duty Transport (Adiabatic Diesel)	3,943	4,925	4,000	- 19
CFC Analysis and Research	0	592	0	-100
Technology Assessment and Transfer	0	0	0	0
Total, Vehicle Propulsion R&D	$ 16,323	$ 17,385	$ 11,400	- 34

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Lawrence Berkeley National Laboratory	$ 0	$ 225	$ 0	-100
Oak Ridge Nationa' Laboratory	$ 177	$ 285	$ 100	- 65

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Vehicle Propulsion R&D			
Automotive Gas Turbine	Continued cost-shared ceramic component development contracts with two industry engine contractors (Garrett and Allison) and several sub-contracted ceramic suppliers. Evaluated ceramic components in automotive gas turbine engines.	Continue development and test of ceramic components for the automotive gas turbine engine with two industry engine contractors (Garrett and Allison) using different engine designs.	Conduct a ceramic component development program for an automotive gas turbine engine, with a single contractor team composed of a contractor/integrator and several ceramic component developers/suppliers (TBD) and technical management through NASA Lewis Research Center (NASA/LeRC), in order to provide a technology base for the automotive industry to consider this high-efficiency, low-emission, fuel-flexible engine for production in the 1995-2000 time frame.
	$ 11,390	$ 11,868	$ 7,400
Automotive Stirling Engine	Evaluated performance and reliability design improvements for Mod II engine and supported selected technology transfer activities with industry and government (U.S. Air Force, U.S. Postal Service, MTI).	No activities.	No activities.
	$ 900	$ 0	$ 0

III. Vehicle Propulsion R&D (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Heavy Duty Transport (Adiabatic Diesel)	Completed advanced adiabatic diesel reference engine design (Detroit Diesel Corp.) and continued emissions and combustion characteristics investigations (MIT), cylinder/liner component development (Cummins, Caterpiller), liquid high temperature lubricant development (Cummins, AKZO Chemical), exhaust heat recovery system analysis and development, and thick thermal barrier coating development and test (Cummins, Caterpillar). ($3,967 including $3,943 new BA and $24 prior year funds.)	Continue thick thermal insulation ceramic coatings development, high temperature liquid lubricant development, ceramic materials friction and wear investigations, in-cylinder ceramic components development, and advanced diesel technology development. Initiate enhanced combustion investigations and NOx reduction aftertreatment evaluation.	Continue support of adiabatic diesel technology to reduce engine heat rejection for the purpose of achieving fuel economy improvements in heavy duty trucks and non-highway rail and marine engines. Support advanced high temperature and pressure in-cylinder components and tribological system development for low heat rejection engines, and investigate thick thermal barrier coatings (Cummins, Caterpillar). Continue advanced high temperature liquid lubricants (Cummins, AKZO), and exhaust heat recovery turbomachinery and advanced components development (Detroit Diesel), in order to bring about the commercial introduction of the adiabatic diesel concept in the 1995-2000 time frame.
	$ 3,943	$ 4,925	$ 4,000
CFC Analysis and Research	Preliminary assessments on potential technology developments for reduction of CFC in transportation systems conducted under Technology Assessment and Transfer subprogram.	Conduct investigations on reduced cooling loads through window glazing, replacement of CFC fluids with flammable liquids, and reduction of CFC content for replacement refrigerants.	No activities. Other related CFC research is performed in the Buildings and Community Systems Program.
	$ 0	$ 592	$ 0
Technology Assessment and Transfer	Printed 10th Annual Report to Congress on Automotive Technology Development using $2 of prior year funds.	Continuing activities are described under the key activity element "Technology and Information Transfer" in the Technology Assessment and Transfer subprogram.	No activities.
	$ 0	$ 0	$ 0
Vehicle Propulsion R&D	$ 16,323	$ 17,385	$ 11,400

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Alternative Fuels Utilization

The goal of the Alternative Fuels Utilization program is to promote the use of nonpetroleum-based transportation fuels by development of a technology base for utilization of synthetic, alcohol, and gaseous fuels in both contemporary and advanced heat engines; and by demonstration of performance and emissions characteristics of alternative-fueled vehicles under operational conditions. Substitution of alternative fuels for petroleum production may result in improved air quality, improved balance of trade economics, and improved energy security. A petroleum savings of 3.5 quads is possible by the year 2010 assuming only 13 percent market penetration for alternative-fueled vehicles.

There has been essentially no cost sharing in the Alternative Fuels Utilization program because of the small size and lack of incentives for industry. However, it is expected that this situation will change dramatically with implementation of the Alternative Motor Fuels Act of 1988. Cooperative demonstration efforts will be sought with State and local authorities, the private sector, and other government agencies. Depending on the participants and situation, cost sharing up to at least 50 percent may be realized.

For the near-term to long-term, activities are focused on demonstrations and database development for alcohol and natural gas fuel utilization in both light and heavy duty engines and vehicles.

For the mid-term, activities are planned for development and demonstration of engine performance and design with synthetic fuels made from coal and shale.

II. A. Summary Table: Alternative Fuels Utilization

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Alcohols/Gaseous Fuels............................	$ 475	$ 1,680	$ 4,100	+144
Synthetic Fuels....................................	1,672	580	900	+ 55
Alternative Motor Fuels Demonstration...........	0	4,450	6,500	+ 46
Total, Alternative Fuels Utilization	$ 2,147	$ 6,710	$ 11,500	+ 71

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oak Ridge National Laboratory	$ 885	$ 835	$ 900	+ 8

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991	
Alternative Fuels Utilization				
Alcohols/Gaseous Fuels	Continued data collection and analysis on Federal methanol-fueled vehicles (LBL, ANL, ORNL). Continued support of Hawaii methanol demonstration project (Univ. of Hawaii-Manoa).	Continue data collection and analysis of Federal Methanol Fleet (LBL, ANL, ORNL) and continue support of Hawaii methanol demonstration project. Conduct an assessment of advanced technology dedicated natural gas and methanol vehicles. Conduct a study of effect of thermal and catalytic barriers to reduce emissions in methanol diesels. Investigate feasibility of flex-fueled (methanol/diesel) diesel vehicles. Initiate studies on combustion enhancement techniques for methanol in diesels. Conduct studies on diesel ignition technology for methanol fuels. Initiate high altitude emissions profiles assessments and requirements.	Continue data collection and analysis on Federal methanol-fueled vehicles at ANL and ORNL to provide industry with an operational and emissions database for dedicated vehicles, and support of the Hawaii methanol demonstration project with dedicated vehicles to provide data on integrated fuel/operations systems. Conduct methanol cold start development of spark-ignition engines since present systems are not reliable and may not meet future emissions requirements. Continue combustion enhancement investigations for.natural gas and alcohol fuels in spark-ignition engines to include chamber configuration and catalytic surfaces in order to develop alternative-fueled engines with minimum emissions and maximum fuel economy. Initiate efforts to assess the concept of oxygen enrichment as a technology for increasing fuel efficiency and catalyst performance. Initiate assessment of catalyst technology designed for specific alternative fuels. Continue assessment of advanced engine control technology for gaseous fuels. Quantify the total emissions profile from engines operating on various alternative fuels and conduct	

III. Alternative Fuels Utilization (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Alcohols/Gaseous Fuels (Cont'd)			experimental studies as required to confirm atmospheric decomposition mechanisms of critical exhaust products from alternative fuels. Develop as appropriate with other groups information on the contribution to global greenhouse gases from alternative fuels. Conduct high altitude tests and evaluations to define model inputs.
	$ 475	$ 1,080	$ 4,100
Synthetic Fuels	Continued operation of synthetic test fuels facility (Southwest Research Institute). Continued investigations on performance, emissions, and wear with conventional engines using synthetic fuels. Initiated investigation of basic and enhanced combustion phenomena to existing engine types to establish fuel/engine features for efficient use of minimally upgraded synthetic crudes (Univ. of Miami, Army Fuels Lab., ORNL, Caterpillar). ($1,732 including $1,672 new BA and $60 prior year funds.)	Continue operation of synthetic test fuel facility at Southwest Research Institute. Conduct studies on tailoring fuel composition to reduce emissions and enhance performance. Conduct cooperative studies on clean diesel fuels from coal.	Continue operation of the synthetic test fuels production facility at Southwest Research Institute, which is the only supplier of controlled test synthetic fuels to the scientific community. Continue investigations on performance, emissions, and wear using coal and shale derived liquid fuels to provide a database for future synthetic fuel utilization. Continue studies on tailoring fuel composition to reduce emissions and enhance performance.
	$ 1,672	$ 500	$ 900
Alternative Motor Fuels Demonstration	No activities. (Preliminary efforts on developing a detailed program plan and establishing interfaces for demonstration activities were accomplished with technology assessment funds and $100 prior year funds.)	Initiate a cooperative effort with GSA to assist in testing of alcohol- and natural-gas fueled vehicles. Initiate passenger vehicle government fleet demonstration for alcohol and natural gas vehicles to include incremental vehicle costs, refueling and fuel supply management, performance data collection and analysis, and vehicle disposal impact study. ($1,185)	Continue light duty vehicle fleet demonstration for methanol and natural gas vehicles at multiple locations. Initiate an established data collection methodology. Establish cooperative efforts with State and local authorities. ($1,600)

III. Alternative Fuels Utilization (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Alternative Motor Fuels Demonstration (Cont'd)	No activities.	Initiate heavy duty truck fleet demonstration for alcohol- and natural gas-fueled vehicles to include pre-acquisition engineering and development, system and specification design, and fleet operations performance analysis. Design and implement a data acquisition and analysis system to provide environmental, cost and operational performance. Initiate development of transportable heavy duty testing capabilities at West Virginia University. ($2,275)	Continue heavy duty truck vehicle fleet demonstrations using ongoing activities in California, New York, and Canada, and with private sector joint ventures. Establish a data collection methodology and computerized database. ($2,900)
	No activities.	Initiate a cooperative effort with DOT/UMTA to assist government agencies in the testing of alcohol- and natural gas-fueled bus vehicles. Design and implement a data acquisition and analysis system to provide environmental, cost, and operational performance. Initiate data collection on existing demonstration fleets. ($800)	Continue natural gas- and methanol-fueled transit bus demonstration using ongoing and newly established activities under UMTA grants. Establish a data collection methodology and include data in a computerized base. Use new refueling and/or engine types as well as existing facilities. ($1,800)
	No activities.	Transfer administrative support funds, including travel costs, to the Interagency Commission on Alternative Motor Fuels and the United States Alternative Fuels Council. ($100)	Continue support for the Interagency Commission on Alternative Motor Fuels and the United States Alternative Fuels Council. ($100)
	No activities.	Conduct studies on methanol plants; finalize studies on stimulation of electric vehicles commercialization and on impacts of CAFE incentives for natural gas vehicles on home heating gas prices. ($200)	Complete studies on methanol plants, CAFE incentives impacts on residential energy pricing, and environmental impacts of alternative fuel utilization. ($300)
	$ 0	$ 4,450	$ 6,500

III. Alternative Fuels Utilization (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Alternative Fuels Utilization	$ 2,147	$ 6,710	$ 11,500

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Electric and Hybrid Vehicle R&D

The Electric and Hybrid Vehicle R&D program focuses on developing, in cooperation with industry, the technology that will lead to the production and introduction of electric vehicles in the Nation's transportation fleet, thereby substituting more abundant sources of energy for petroleum-based fuels and reducing urban air pollution. Advanced battery and propulsion system technologies are being developed to improve the performance and reliability of electric vehicles and reduce their initial and operating costs to be competitive with conventional vehicles. A market penetration of 10 percent of electric automobiles and 15 percent of light trucks and vans would result in the substitution of 1.6 quads of petroleum energy by more abundant sources of energy. Electric vehicles produce no emissions during operation.

The cost sharing on industry contracts has varied from 5 percent to 32 percent. For electric vehicle testing and evaluation programs, the cost sharing is "in kind sharing" as opposed to "dollar sharing." For such field testing of new technologies, the Government will typically pay for the cost of the hardware and the contractors will pay for the installation, testing, maintenance, data collection, and report writing. The cost sharing by the field testing site operators has varied from 42 percent up to 73 percent.

For the near-term, the program is developing improved battery technologies with increased energy and cycle life, and is working with the utility industry to commercialize a full-size, one-ton electric General Motors' G-Van and fleet testing an electric Chrysler minivan.

For the mid-term, the program is working with the Ford Motor Company in developing the technology for a modularized a.c. propulsion system for a minivan, passenger car, and full-sized van, and with battery developers to demonstrate vehicle-sized, advanced zinc-bromine and sodium-sulfur battery systems.

For the long-term, the program is conducting research and development on advanced batteries, fuel cells, and propulsion system technologies that will improve the marketability of electric and hybrid vehicles for a broad range of applications.

II. A. Summary Table: Electric and Hybrid Vehicle R&D

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Electric Vehicle Battery R&D....................	$ 6,417	$ 7,887	$ 3,600	- 54
Electric Vehicle Propulsion Systems.............	4,065	6,013	4,500	- 25
Test and Evaluation.............................	2,631	3,066	3,000	- 2
National Laboratory Management Support..........	720	711	700	- 2
Total, Electric and Hybrid Vehicle R&D	$ 13,833	$ 17,677	$ 11,800	- 33

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 1,223	$ 1,075	$ 1,000	- 7
Idaho National Engineering Laboratory - EG&G	$ 2,423	$ 3,005	$ 2,550	- 15
Los Alamos National Scientific Laboratory	$ 150	$ 200	$ 200	0
Sandia National Laboratories	$ 747	$ 300	$ 300	0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Electric and Hybrid Vehicle R&D			
Electric Vehicle Battery R&D	Continued development of sodium-sulfur battery technology including subsystem thermal management; completed integration and testing of total battery subsystems for electric vehicle application developed in FY 1988 (Chloride Silent Power Ltd. and Ford/Powerplex). Conducted R&D on sodium-metal chloride battery technology (SNL/TBD). ($1,850)	Continue development of sodium-sulfur battery technology including thermal management, safety, and integration with advanced powertrain (Chloride Silent Power Ltd./SNL). ($1,300)	Continue development of sodium-sulfur battery technology. A one-third size battery successfully completed 220 cycles with an estimated vehicle range of 148 miles on an urban driving cycle. Complete development of a full-size battery for integration and test in the Ford ETX-II electric minivan (Chloride Silent Power Ltd./ANL/SNL). Further development is required for thermal management, safety, and cycle life improvements. ($1,800)
	Continued development of zinc-bromine battery subsystem for electric vehicle application; completed testing and identification of problems of the first battery system, and initiated development of system to correct deficiencies (Johnson Controls/SNL). ($1,000)	Complete integration and testing of total zinc-bromine battery subsystems for electric vehicle application developed in FY 1989. Evaluate battery in the context of a propulsion system (Johnson Controls/SNL). ($990)	Continue development of zinc-bromine battery subsystems for integration and test with an advanced a.c. propulsion system to demonstrate a vehicle range of 100 miles and cycle life of 1,000 cycles (Johnson Controls/ANL/SNL). Further development is required for improved fabrication methods, cost reduction, and demonstration of system cycle life. ($1,000)

III. Electric and Hybrid Vehicle R&D (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Electric Vehicle Battery R&D (Cont'd)	Continued development of a lithium-metal sulfide battery system and enhanced development of thermal management system (ANL/TBD). ($975)	Continue development of a lithium-metal sulfide battery system and enhance development of thermal management system. (ANL/TBD). ($965)	Continue development of lithium-metal sulfide technology. Battery modules under test have demonstrated a range of over 150 miles (ANL/TBD). Further development is needed to complete the total battery system, test cycle life, reduce materials and fabrication costs, and improve the thermal management system. ($1,000)
	Continued development of nickel-iron (Eagle Picher/ANL) and nickel-cadmium (TBD) fibrous electrode battery technologies; optimized iron-air cell design and developed module for laboratory evaluation (Westinghouse); continued flow-by lead-acid cell design and initiated module development (Johnson Controls/ANL). ($2,502)	Continue design study of sodium-metal chloride battery technology (Beta Power/SNL). Continue development of nickel-iron fiber electrode technology (Eagle-Picher/ANL). Conduct scale-up of full-sized iron-air laboratory electric vehicle battery (Westinghouse/INEL). Continue development of flow-by lead-acid battery to improve cycle life (Johnson Controls, Inc./ANL). Conduct evaluation of zinc-air, nickel-metal hydride, and advanced sealed lead-acid batteries for potential followup development (TBD/INEL/ANL). Evaluate ultracapacitor technology as a means for enhancing battery performance by load-leveling power demand (TBD/INEL). Develop 12-volt version of CSPL tubular lead-acid battery for Ford Modular Electric Vehicle Program (Chloride Silent Power, Ltd. (CSPL)/INEL). ($4,632)	No activities.
	$ 6,417	$ 7,887	$ 3,600

III. Electric and Hybrid Vehicle R&D (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Electric Vehicle Propulsion Systems	Completed currently contracted a.c. propulsion technology (ETX-II) including sodium-sulfur battery technology (Ford Motor Company). ($850)	Complete development of single-shaft a.c. propulsion system (ETX-II), including testing with Power-Plex's and Chloride Silent Power's sodium-sulfur batteries (Ford/INEL). Initiate Modularized Electric Vehicle Program (MEVP) to develop single-shaft a.c. propulsion system components for multiple vehicle sizes (Ford/INEL). ($2,387)·	Continue development of the modularized advanced electric vehicle components for a small passenger car to a full-size van. Integrate with advanced batteries for installation on production lines in the mid-1990s (Ford Motor Company/INEL). ($2,500)
	Completed advanced dual-shaft a.c. propulsion system technology (DSEP) development including nickel-iron battery subsystem (Eaton Corporation). ($640)	No activities.	No activities.
	Completed Phase I brass-board evaluation in laboratory and initiated Phase II testbed bus integration (Booz, Allen & Hamilton, Energy Research Corp., Georgetown Univ.). Initiate development of thermoelectrochemical fuel cell system that utilizes fuel and waste heat to produce electric energy (General Motors/ANL). ($2,575)	Complete Phase I laboratory evaluation of brass-board phosphoric acid fuel cell technologies (Booz, Allen & Hamilton, Energy Research Corp., Georgetown Univ./ANL). Conduct evaluation of Phase I results and initiate Phase II testbed bus integration (TBD/ANL). Complete feasibility evaluation of thermochemical fuel cell system (General Motors/ANL). Initiate development of proton exchange membrane advanced fuel cell technologies for electric vehicle applications (TBD/ANL). ($3,616)	Continue development of fuel cell/battery hybrid propulsion system for an urban bus application (ANL/TBD). The effort would include integration into vehicle and road testing. ($2,000)
	$ 4,065	$ 6,013	$ 4,500

III. Electric and Hybrid Vehicle R&D (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Test and Evaluation	Tested dual-shaft and single-shaft a.c. developmental propulsion systems on laboratory dynamometer at Idaho National Engineering Laboratory. Evaluated light-weight batteries with fiber composite electrodes (INEL). Conducted laboratory testing of G-Van and Chrysler TE-Van (INEL). Developed speed control system for variable reluctance motor (MIT). ($1,922 including $1,896 new BA and $26 prior year funds.)	Complete laboratory dynamometer testing of the dual-shaft (DSEP) a.c. propulsion system, the single-shaft (ETX-II) propulsion system with the Chloride Silent Power sodium-sulfur battery, and a production model of the General Motors G-Van. Perform component testing of light-weight permanent magnet motor (INEL). ($1,706)	Conduct laboratory (INEL) characterization testing of advanced battery cells, modules, and subsystems developed in the R&D program and by others. Conduct laboratory (INEL) and track testing of new vehicle technologies such as ETX-II, DSEP, and G-Van with advanced battery systems. ($2,000)
	Evaluated new vehicle technologies in fleet operations through the Site Operators' User Task Force (GTE, Detroit Edison, Arizona Public Service, U.S. Navy, Univ. of Hawaii, Sandia National Laboratory). Continued to upgrade existing vehicles with new battery and drivetrain technologies. Continued data collection and analysis to determine viability of improvements (Booz, Allen & Hamilton). ($735)	Conduct in-use test and evaluations of new component and vehicle technologies in a cost-shared cooperative effort with industry in high air pollution metropolitan areas through the Site Operators' User Task Force (GTE, Detroit Edison, Arizona Public Service, Southern California Edison, U.S. Navy). ($1,360)	Conduct fleet testing and evaluation program of new vehicle technologies such as a DSEP, Soleq, and G-Van in the cooperative cost-shared efforts with the Site Operators' User Task Force (GTE, Detroit Edison, Arizona Public Service, U.S. Navy, Univ. of Hawaii, Sandia National Laboratory, Southern California Edison, Los Angeles Power & Light) in high air pollution metropolitan areas. ($1,000)
	$ 2,631	$ 3,066	$ 3,000
National Laboratory Management Support	Continued laboratory project management for electric vehicle battery R&D, propulsion systems, and test and evaluation (INEL, ANL).	Continue laboratory project management for electric vehicle battery R&D, propulsion systems, and test and evaluation.	Continue laboratory project management for electric vehicle battery R&D, propulsion systems, and test and evalution (INEL, ANL).
	$ 720	$ 711	$ 700
Electric and Hybrid Vehicle R&D	$ 13,833	$ 17,677	$ 11,800

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Technology Assessment and Transfer

The purpose of the Technology Assessment and Transfer program is to centralize cross-cutting program support activities. Projects include the preparation and publication of the Gas Mileage Guide, an annual publication providing consumers with new car fuel economy information based on estimates provided by the Environmental Protection Agency; the conduct of technology assessment and transfer activities on both technology and program bases, to assess related developments by industry and other Government-sponsored programs to aid in program direction and to ensure that results from the program are conveyed to industry; the acquisition and analysis of transportation energy data; the identification, monitoring, review, and assessment of related industry market trends; the publication of statistical compendiums; support of special projects such as the Methanol Marathon; and management and planning support.

II. A. Summary Table: Technology Assessment and Transfer

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Technology and Information Transfer..............	$ 1,848	$ 1,879	$ 1,400	- 25
Technical Evaluation, Analysis and Planning.....	396	396	400	+ 1
Total, Technology Assessment and Transfer	$ 2,244	$ 2,275	$ 1,800	- 21

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 800	$ 793	$ 800	+ 1
Lawrence Berkeley National Laboratory	$ 85	$ 0	$ 0	0
Oak Ridge National Laboratory	$ 250	$ 200	$ 350	+ 75

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Technology Assessment and Transfer			
Technology and Information Transfer	Completed the publication and distribution of the Gas Mileage Guide for model year 1989 and continued assessment of the Guide (ANL), using $411 of prior year funds. ($0)	No activities.	No activities.
	Published and distributed the Gas Mileage Guide for model year 1990. ($693)	Publish and distribute the Gas Mileage Guide for model year 1991. ($692)	No activities.
	Continued transportation R&D technology transfer activities, including vehicle propulsion conferences, workshops, publications, etc., to assure transfer of technology developed within DOE to other government agencies and industry. Conducted technology assessments in government and industry. ($1,155)	Continue transportation R&D technology transfer activities including conferences, technology workshops, publications, etc., to assure transfer of technology developed within DOE to other government agencies and industry. Conduct technology assessments in government and industry. Support SAE competitions to promote student exposure to alternative transportation fuel utilization. ($1,187)	Continue transportation R&D technology transfer activities including conferences, technology workshops, publications, etc., to assure transfer of technology developed within DOE to other government agencies and industry. Continue technology assessments of new ideas and proposals, U.S. and foreign industry developments, preliminary evaluations of technology development requirements and energy/economic impacts for proposed new initiatives, and analyses of technological solutions to energy conservation problems (ANL/ORNL/TBD). Support SAE Student Alternative Fuel Design Competitions in concert with the automotive industry and with the Dept. of Energy, Mines, and Resources of Canada, to promote student exposure to alternative transportation fuels in both dedicated and flex-fuel vehicles (ANL).
	$ 1,848	$ 1,879	$ 1,400

III. Technology Assessment and Transfer (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Technical Evaluation, Analysis and Planning	Collected, analyzed, and presented transportation andl energy data for use by program managers in their program planning and monitoring. Produced the "Transportation Energy Data Book" (ORNL). Collected and analyzed data on the market condition for fuel efficient technologies. Produced the "MPG and Market Shares" report (ORNL). Updated and ran the transportation energy model to obtain a detailed consistent baseline projection of the demand for transportation energy by mode. Produced the "Transportation Projection" report (ANL). ($400 including $396 new BA and $4 prior year funds.)	Collect, analyze, and present transportation and energy data for use by program managers in their program planning and monitoring. Produce the "Transportation Energy Data Book." Collect and analyze data on the market condition for fuel efficient technologies. Produce the "MPG and Market Shares" report. Update and run the transportation energy model to obtain a detailed consistent baseline projection of the demand for transportation energy by mode. Produce the "Transportation Projection" report.	Collect, analyze, and present transportation and energy data for use by program managers in their program planning and monitoring (ORNL). Collect and analyze data on the market condition for fuel efficiency technologies (ORNL). Update and run the transportation energy model to obtain a detailed consistent baseline projection of the demand for transportation energy by mode (ANL).
	$ 396	$ 396	$ 400
Technology Assessment and Transfer	$ 2,244	$ 2,275	$ 1,800

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Advanced Materials Development

The goal of the Advanced Materials Development program is to develop an industrial technology base in structural ceramics, ceramic composites, and ceramic coatings capable of providing reliable and cost-effective components for high temperature, high efficiency transportation propulsion systems while eliminating requirements for scarce strategic materials. The energy saving potential of ceramics in automotive propulsion systems (or almost any energy conversion system) is based on the capability to operate at higher temperatures and the reduced friction, weight, and inertia inherent in the mechanical and physical properties of ceramics. In addition to the positive impacts on energy consumption and air quality resulting from introduction of ceramic components into transportation engines, a recent worldwide survey indicated economic factors are significant. It is estimated that 184 million ceramic engine parts will be needed in the U.S. in the year 2000, growing to 550 million by 2010. The value of these parts in 1988 dollars will expand from more than $1 billion in the year 2000 to more than $3.6 billion in 2010. These estimates indicate that the U.S. gross national product could expand by $11 billion in the year 2000 if U.S. ceramic component manufacturers are leaders in the technology, or decline by $26 billion if foreign producers are leaders. Annual savings in petroleum are estimated to be more than 30 million barrels by the year 2000, worth over $675 million; this expands to 275 million barrels and $5.5 billion by 2010.

Although the Advanced Materials Development technical agenda has been considered high risk by industry, the growing forecast market has allowed the obtaining of at least 20 percent cost sharing, particularly with the patent waiver incentive. Progress in technology development has resulted in increased cost sharing, now averaging between 25 and 30 percent. This cost share does not include internal related R&D expenditures by industry which was reported to be $177 million in 1987, up 58 percent from the previous year.

Near-term activities include development of low temperature monolithic and whisker composite ceramic materials, ceramic thermal barrier and wear coatings, ceramic nondestructive evaluation techniques, high quality ceramic powders, and a ceramic materials characteristics database.

Mid-term activities are focused on development of advanced ceramics processing techniques, life prediction techniques and analyses, high temperature monolithic and composite ceramic materials, and design methodology codes for ceramic composites.

II. A. Summary Table: Advanced Materials Development

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Materials and Processing........................	$ 8,353	$ 9,401	$ 7,500	- 20
Design Methodology..............................	500	390	130	- 67
Database and Life Prediction....................	6,100	4,845	6,370	+ 31
Total, Advanced Materials Development	$ 14,953	$ 14,636	$ 14,000	- 4

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oak Ridge National Laboratory	$ 5,420	$ 5,140	$ 5,075	- 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Advanced Materials Development			
Materials and Processing	Continued industry R&D projects in silicon carbide (Carborundum) and silicon nitride (Ford) powder synthesis and characterization; improved processing and in-process NDE of monolithic ceramics (Norton, GTE Labs); microwave sintering of ceramics and composites (ORNL); use of aqueous gel-casting system for silicon nitride (ORNL); development of whisker-toughened silicon nitride matrix composites (GTE Labs, Norton, Garrett), layered alumina-zirconia composites (Ceramatec), and silicon nitride-silicon carbide composites (U. of Michigan); coatings for contact stress resistance (GTE Labs) and wear resistance (Cummins, Caterpillar); and joining of ceramics to ceramics (Norton), ceramics to metals (GTE Labs), and oxide ceramics to ceramics and metals (Battelle).	Continue industry projects in ceramic powders synthesis; advanced processing of silicon nitride; gel-casting process; silicon carbide whiskers; titanium diboride whiskers; whisker toughened silicon nitride composites; contact stress and wear resistant ceramic coatings; and ceramic-to-ceramic and ceramic-to-metal joining. Continue microwave sintering development at ORNL and initiate collaborative agreements.	Continue industry projects in high strength silicon carbide whisker processing, forming silicon nitride by unique non-powder process, advanced processing of reliable ceramics (Norton, GTE), development of coatings for ceramics (GTE), and diesel liner/ring coating scale-up. Continue in-house (ORNL) projects in microwave sintering, gel-cast processing, toughened ceramics research and analysis, CVD coatings, and metal ceramic attachments. Continue university research on whisker composites, and low expansion ceramics (Southern Illinois & VA Polytech); initiate industry joining-of-ceramics scale-up effort. Complete powder characterization project (NIST). These projects will provide an understanding of the relationship between ceramic raw materials, the processing variables, their resultant microstructures, and physical and mechanical properties for the purpose of providing industry with new or improved ways of producing highly reliable and economical ceramic components for advanced heat engines.
	$ 8,353	$ 9,401	$ 7,500

III. Advanced Materials Development (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Design Methodology	Continued R&D projects in characterization of wear and friction behavior of candidate insulated diesel engine materials (Battelle), development of advanced Weibull statistics for use in ceramic design codes (GE), and modeling of brittle fracture phenomena (U. of Tenn.).	Continue R&D projects on development of advanced statistics and wear behavior of ceramic materials for insulated diesel engines and crack fracture and stress models.	Complete crack modeling and coating adhesion projects (U. of Tenn.), which completes the Design Methodology task for determining analytical techniques for predicting ceramic structural behavior from mechanical properties and microstructures, tribological behavior at high temperatures, and improved methods for describing the fracture statistics of ceramics.
	$ 500	$ 390	$ 130
Database and Life Prediction	Continued industry conducted life prediction projects (Allison, Garrett). Continued properties measurement by tensile, cyclic fatigue, and stress rupture testing (ORNL, N.C. A&T Univ., NASA, NIST). Continued development of nondestructive evaluation methods of x-ray computed tomography, ultrasonics, nuclear magnetic resonance for inspection of green ceramics, and synchrotron computer tomography (ORNL, ANL, Garrett). Continued characterization of ceramic microstructures of ceramic powders and ceramics exposed to heat engine environments (ORNL, U. of Dayton).	Continue industry projects on time dependent behavior of ceramics; uniaxial tension testing; environmental impacts on ceramic materials; and ultrasonic, microfocus x-ray and nuclear magnetic resonance nondestructive evaluation. Continue ceramics properties database and diesel combustion impacts investigations at ORNL, and support participation in the IEA standardization task.	Continue projects at ORNL in program database, fracture behavior of toughened ceramics, cyclic fatigue testing, tensile stress rupture testing, NDE development of x-ray tomography and ultrasonics. Support projects in environmental effects (N.C. A&T Univ.), various aspects of powder characterization (Penn State, Rutgers, and U. of Wisconsin), and standard powders (NIST). Continue major life prediction contracts (Allison & Garrett), and a project on toughened ceramics life prediction (NASA). Continue support of the Advanced Turbine Technology Application Program through microstructural characterization of ceramics and in rotor materials database testing. Support industrial participation in the IEA standardization task by providing tensile and flexural test specimens, and technical support. These projects will provide an understanding and application of predictive models for structural ceramic mechanical reliability, measurement techniques for long-term mechanical property behavior, physical understanding of time-dependent mechanical failure in

III. Advanced Materials Development (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Database and Life Prediction (Cont'd)			order to provide industry with the tools needed for predicting the reliability of ceramic heat engine components.
	$ 6,100	$ 4,845	$ 6,370
Advanced Materials Development	$ 14,953	$ 14,636	$ 14,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: High Temperature Materials Laboratory

The High Temperature Materials Laboratory (HTML) at Oak Ridge, Tennessee, supports both Government and industry efforts. The HTML provides a unique capability for high temperature materials research which (1) makes available a broad multidisciplinary professional staff, (2) provides a common focal point for industry/university/government participation, and (3) provides access to high-cost research equipment which would otherwise be denied many researchers.

Although direct cost sharing is not required by industry users at the HTML unless the work is proprietary (full costs are recovered for proprietary work), industry does share significantly in the research costs since they are responsible for personnel and travel costs of their employees engaged in the research, and the results are made available to the scientific and industrial communities.

II. A. Summary Table: High Temperature Materials Laboratory

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
High Temperature Materials Laboratory............	$ 2,000	$ 2,275	$ 2,800	+ 23
Total, High Temperature Materials Laboratory	$ 2,000	$ 2,275	$ 2,800	+ 23

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oak Ridge National Laboratory	$ 2,000	$ 2,204	$ 2,800	+ 27

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
High Temperature Materials Laboratory	Supported 13 scientific staff dedicated to user facilities and building maintenance and operations. 16 companies, 1 agency, and 24 universities were users at the facility.	Support 15 scientific staff dedicated to the original four user facilities, building maintenance and operations, and the initiation of two new user centers.	Support 18 scientific staff dedicated to the original four user facilities, two new user centers, and building maintenance and operations. The user centers are: materials analysis, high temperature mechanical properties, high temperature x-ray diffraction, high temperature physical properties, ceramics specimens preparation, and residual stress measurements.
	$ 2,000	$ 2,275	$ 2,800
High Temperature Materials Laboratory	$ 2,000	$ 2,275	$ 2,800

DEPARTMENT OF ENERGY
FY 1981 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Capital Equipment

The funds requested provide for the acquisition or fabrication of capital equipment not related to construction projects.

II. A. Summary Table: Capital Equipment

Program Activity	FY 1979 Actual	FY 1980 Estimate	FY 1981 Request	% Change
Advanced Materials Development....................	$ 550	$ 689	$ 500	- 27
Alternative Fuels Utilization Program............	0	0	500	
Electric Vehicle Test & Evaluation...............	0	300	0	-100
High Temperature Materials Laboratory............	0	728	0	-100
Total, Capital Equipment	$ 550	$ 1,717	$ 1,000	- 42

II. B. Major Laboratory and Facility Funding

	FY 1979 Actual	FY 1980 Estimate	FY 1981 Request	% Change
Idaho National Engineering Laboratory - EG&G	$ 0	$ 300	$ 0	-100
Oak Ridge National Laboratory	$ 500	$ 1,363	$ 500	- 63

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Capital Equipment			
Advanced Materials Development	Developed a prototype, high energy microwave sintering furnace. Purchased equipment for scale-up of gel-cast processing of advanced ceramics and composites. ($802 including $500 new BA and $102 prior year funds.)	Purchase a pressure casting machine, a brazing/joining furnace, and microwave processing equipment for advanced processing development. Purchase accoustic microscope and upgrade nondestructive evaluation equipment.	Purchase a slurry spray dryer for gel-casting development, high temperature furnaces, transducer and detector to upgrade existing ultrasonic inspection system, and laser-based high temperature strain extensiometer system for tensile creep machines.
	$ 550	$ 800	$ 500
Alternative Fuels Utilization Program	No activities.	No activities.	Provide equipment to supplement facilities being established by the Colorado School of Mines in cooperation with the Regional Transportation District, the Public Service Company, and the State to provide operational emissions data at high altitudes for utilization in environmental and emissions models.
	$ 0	$ 0	$ 500
Electric Vehicle Test & Evaluation	No activities.	Purchase a test station for the battery laboratory with greater power capability, torque measuring devices for the dynamometer laboratory, and improved data acquisition equipment.	No activities.
	$ 0	$ 300	$ 0
High Temperature Materials Laboratory	No activities.	Upgrade existing user facilities instrumentation to include counters, test chambers, furnaces, leak detectors, pumps, and computer systems. Purchase equipment for new user centers to include surface profilometer, centerless grinder, and grinder, multi-axis grinding instrument, and center grinding instrument.	No activities.

III. Capital Equipment (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
High Temperature Materials Laboratory (Cont'd)	$ 0	$ 728	$ 0
Capital Equipment	$ 550	$ 1,717	$ 1,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

TRANSPORTATION

I. Preface: Program Direction

The funds requested provide for Full-Time Equivalents (FTEs) to develop strategies, plans, and resource requirements, and to provide the integrated program management necessary to conduct the research and development of the various transportation technologies described in the budget request.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction................................	$ 2,280	$ 2,284	$ 2,300	+ 1
Total, Program Direction	$ 2,280	$ 2,284	$ 2,300	+ 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provided salaries and benefits and travel for 30 FTEs to develop strategies, plans and resource requirements, and provide the management and support necessary to conduct research, development, test and evaluation programs. ($2,557 including $2,280 new BA and $277 prior year funds.)	Provide salaries and benefits and travel for 38 FTEs to develop strategies, plans and resource requirements, and provide the management necessary to conduct research, development, test and evaluation programs.	Provide salaries and benefits and travel for 30 FTEs to develop strategies, plans and resource requirements, and provide the management necessary to conduct research, development, test and evaluation programs.
	$ 2,280	$ 2,284	$ 2,300
Program Direction	$ 2,280	$ 2,284	$ 2,300

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Obligations in thousands of dollars)

OBJECT CLASS SUMMARY

Transportation

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent....................	$1,790	$1,760	$1,772
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	179	176	177
11.9 Total personnel compensation...........	1,969	1,936	1,949
12.1 Civilian personnel benefits............	197	194	195
21.0 Travel and transportation of persons...	108	150	150
25.0 Other services.........................	51,506	60,962	53,806
31.0 Equipment..............................	550	1,717	500
32.0 Land & structures......................	0	0	0
Totals......................................	$54,330	$64,959	$56,600

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION

OVERVIEW

MULTI-SECTOR

The Multi-Sector activities focus on,new and emerging technologies that can be utilized by one or more of the energy marketing sectors (i.e., industry, buildings, transportation, utilities). These activities are structured into five programs areas: Energy Conversion and Utilization Technologies (ECUT); International Research Monitoring (IRM); Conservation Program Analysis and Planning (CPAP); Inventions and Innovation Program (IIP); and the National Appropriate Technology Assistance Service (NATAS). As described below, these activities directly or indirectly support the DOE goals, in general, and the Conservation objectives, in particular. Additionally, as in previous years this budget supports the performance of beneficial work-for-others activities performed on a reimbursable basis including costs associated with the use of facilities and staff resources.

Energy Conversion and Utilization Technologies: The Energy Conversion and Utilization Technologies (ECUT) Program activities provide the core of the longer-term interdisciplinary research funded by DOE/Conservation. ECUT's primary mission is to expand and solidify the generic technology base that supports initiatives by both DOE end-use Conservation programs and U.S. private industry to improve the efficiency of energy conversion and utilization systems. ECUT research is aimed at understanding and improving the techniques, processes, and materials that enhance the efficiency of energy conversion and promote the DOE goals of energy security, competitiveness of U.S. technology in the world market, and developing environmentally compatible energy technologies.

There are four distinguishing features of ECUT research: (1) it is a program of directed interdisciplinary research (problem oriented) that anticipates future end-use sector needs; (2) it focuses on solving problems that may be common to more than one energy-consuming sector, (3) it makes a concerted effort to seek out, encourage, and support new ideas and concepts, and (4) it provides predictive models and design tools for use by the private sector in achieving increased energy productivity in energy conversion and end-use applications.

Conservation International Research Monitoring: The primary mission of the Conservation International Research Monitoring (IRM) Program is to monitor and evaluate the current status and future direction of energy conservation-related research and development in foreign countries.

The IRM Program provides information on key issues facing energy conservation researchers, program managers, and policy makers. These issues include: (1) progress in foreign technology areas important to the Conservation Program, (2) utilization in the U.S. of energy conservation-related scientific and technological advances made by foreign countries; and (3) improved access to relevant foreign country information needed to identify advances and trends in technological research. The IRM program enables DOE to identify available worldwide technical expertise that could be tapped and utilized to improve the U.S. competitive edge and promote the development of environmentally acceptable energy conservation technologies.

The overall objectives of the Conservation IRM Program are to: (1) provide support and analysis for international activities in the Department's Conservation programs; (2) assess the technical status of conservation-related technologies in key foreign nations; and (3) develop information on the organization and technical emphasis of foreign science and technology activities supporting energy conservation.

Conservation Program Analysis and Planning: Conservation Program Analysis and Planning (CPAP) provides support to the Deputy Assistant Secretary for Conservation to conduct the activities of the Conservation Program in an integrated approach which addresses the requirements of all end-use sectors. CPAP undertakes those activities that address generic and crosscutting technology-limiting problems; and it provides a consistent planning framework for addressing the interrelationship between energy use and the environment.

Inventions and Innovation: The mission of the Inventions and Innovation Program (IIP) is to tap the creative resources of individuals and small businesses to improve national energy supply and utilization. IIP uses two programs with different approaches to ensure that activities will promote the DOE goals of energy security, international competitiveness, and a clean environment. These programs are: the Energy-Related Inventions Program, which evaluates and supports promising energy-related inventions and concepts, and the Innovative Concepts Program, which solicits and supports the development of novel concepts related to targeted energy conservation needs.

National Appropriate Technology Assistance Service: The National Appropriate Technology Service (NATAS) seeks to help the American public investigate and implement appropriate technologies and to help innovators solve problems they have in commercializing energy-saving products and services. By disseminating technical information and introducing available technologies to a broad spectrum of energy consumers for small-scale applications, NATAS supports the DOE goals of energy security and the adoption of environmentally benign energy technologies at the grassroots level of consumption and production.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ASSISTANT SECRETARY FOR CONSERVATION AND RENEWABLE ENERGY
(dollars in thousands)

LEAD TABLE

Multi-sector

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Energy Conversion and Utilization Technologies Operating Expenses	$ 22,743	$ 26,404	$ 26,404	$ 22,900	$ -3,504	-13%
Conservation Program International Research Monitoring Operating Expenses	$ 200	$ 297	$ 297	$ 400	$ +103	+35%
Conservation Program Analysis and Planning Operating Expenses	$ 400	$ 297	$ 297	$ 500	$ +203	+68%
Inventions and Innovation Operating Expenses	$ 4,850	$ 4,895	$ 4,895	$ 4,800	$ -95	-2%
National Appropriate Technology Assistance Service Operating Expenses	$ 1,400	$ 1,385	$ 1,385	$ 1,400	$ +15	+1%
Technology Assessment and Transfer Operating Expenses	$ 932	$ 948	$ 948	$ 982	$ +34	+4%
Capital Equipment Capital Equipment	$ 550	$ 593	$ 593	$ 300	$ -293	-49%

LEAD TABLE - Multi-Sector (cont'd)

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Program Direction						
Operating Expenses	$ 1,175	$ 1,193	$ 1,193	$ 1,175	$ -18	-2%
TOTAL	$ 32,250	$ 36,012*	$ 36,012	$ 32,457	$ -3,555	-10%
Summary						
Operating Expenses	$ 31,700	$ 35,419	$ 35,419	$ 32,157	$ -3,262	-9%
Capital Equipment	550	593	593	300	-293	-49%
Total Program	$ 32,250	$ 36,012*	$ 36,012	$ 32,457	$ -3,555	-10%
Staffing (FTE's)	18	19	19	17		

*FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

Authorization:
- P.L. 93-577, "Federal Non-nuclear Energy Research and Development Act of 1974."
- P.L. 94-438, "Energy Reorganization Act of 1974."
- P.L. 95-91, "Department of Energy Organization Act."

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
INTERIOR AND RELATED AGENCIES
(dollars in thousands)

SUMMARY OF CHANGES

Energy Conservation, Multi-Sector

FY 1990 Congressional Appropriation	$38,415
Adjustments	- 403
FY 1991 Base	38,012
Energy Conversion and Utilization Technologies (ECUT)	
- Conclude activities investigating selected concepts to reduce carbon dioxide emissions from combustion systems. Reduce level of effort in Continuous Combustion	- 535
- Conduct additional effort in energy conversion cycle/system simulation incorporating process models developed during FY 1989 and FY 1990	+ 170
- Maintain thermally insulating and superconducting materials R&D. Reorient Corrosion-Resistant Materials effort toward coatings technology. Reduce most research areas: Materials-by-Design by phasing out work on ultra-tough ceramics; Lightweight and Biobased Materials research by reducing biobased plastics projects, while starting work on inorganic polymers; High Temperature Materials by starting phase-out of nickel aluminide work; Materials Processing Technology by concluding or scaling down all efforts but waste minimization; and reduce Materials System Reliability R&D on monitoring processing of metals and ceramics	-3,217
- Deemphasize activities for development of novel bioreactor concepts; continue research on photobioreactors for carbon dioxide removal by microalgae; initiate research on removal of methane from emission streams using inorganic metal complexes modeled on methane oxidase enzymes	+ 45
- Expand emission control research to investigate reduced-pollution lubricants and components	+ 33
Conservation Program International Research Monitoring	
- Continue prior year activities at an enhanced level; initiate assessment of Japan and European Community energy intensity and environmental issues/responses	+ 103
Conservation Program Analysis and Planning	
- Prepare a comprehensive multi-year plan; conduct planning and analysis in several areas affecting energy efficiency R&D and the DOE Conservation programs	+ 203
Inventions and Innovation Programs	
- Reduce the number of inventions evaluated for technical feasibility; continue the National Innovation Workshops at FY 1990 level; extend the period between solicitations for Innovative Concepts	- 95

SUMMARY OF CHANGES - Multi-Sector (cont'd)

National Appropriate Technology Assistance Service (NATAS)	
- Continue NATAS activities at prior year levels	+ 15
Technology Assessment and Transfer	
- Introduce ECUT systems analysis and program appraisal activities	+ 34
Capital Equipment	
- Reduce capability to provide equipment to national laboratories	- 293
Program Direction	
- Provide funding for a total of 17 FTE's	- 18
FY 1981 Congressional Budget Request	$32,457

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Energy Conversion and Utilization Technologies

The Energy Conversion and Utilization Technologies (ECUT) Program serves a unique function in the energy conservation research efforts of DOE. ECUT bridges the research gap between basic energy research programs and the R&D efforts of the DOE end-use conservation programs and the U.S. industrial community. ECUT applies emerging basic scientific and technical advances (in the U.S. and abroad) to specific critical technology needs and expands the knowledge base for the development of improved energy conservation technologies. ECUT research is, therefore, on the critical path between basic research and end-use applications, providing knowledge that is immediately useful to current technologies while strengthening the foundation upon which innovative, revolutionary, and advanced concepts can evolve.

ECUT conducts targeted research in the multidisciplinary areas of Combustion, Thermal Sciences, Materials, Biocatalysis, and Tribology. As described below, these research activities directly or indirectly support the more specific DOE/Conservation objectives of enhancing U.S. energy use efficiency, expanding fuel flexibility options and reducing demand/dependency on imported fuels, enhancing industrial productivity and competitiveness, helping mitigate the potential for acid rain and global warming, and helping assure national energy security and stability.

Combustion: Understanding combustion phenomena is critical to increasing fuel efficiency, maintaining environmental acceptability, and improving the capability to use alternative fuels. Use of fossil energy, other than as feedstock in production of petroleum and chemicals, invariably necessitates combustion; hence, any small improvement in combustion efficiency can result in significant energy savings. For example, an improvement in automobile and light truck fuel economy of one-tenth of a mile per gallon translates into 11 million barrels of imported oil or 60 trillion Btus of energy per year. By focusing research on critical technical issues such as those facing the automotive industry in developing efficient piston engines, ECUT helps improve their competitiveness in the world market.

Thermal Sciences: Conversion of heat to energy forms useful to the end-use sectors (i.e., mechanical work, electricity, or process heat at various temperatures) depends on the various methods used and their conversion efficiencies. Energy recovered through improved conversion processes (e.g., more effective heat exchangers, ability to convert waste heat to other uses, etc.) represents a corresponding reduction in energy demand. In the industrial sector alone, about 10 quads per year of energy could be saved through improved energy conversion and heat/mass transfer technologies. Advanced conversion systems under consideration can possibly provide alternatives to conventional technologies that utilize chlorofluorocarbons (CFCs) which have been identified to be responsible for the depletion of the stratospheric ozone layer as well as being a potential greenhouse gas.

Materials: The efficiency and reliability of virtually all energy conversion and utilization systems are limited by materials performance capability. A majority of energy systems operate below optimum levels because materials available for fabricating components cannot withstand more severe operating conditions. Non-optimum operation results in lower efficiency, increased fuel consumption, and higher emissions of environmentally harmful species. Therefore, improved materials performance capability for various end-use applications can contribute to significant energy savings. High temperature materials that allow energy conversion systems to operate near optimum conditions can reduce conversion losses by as much as five quads. Other potential savings include: two quads through more effective thermal insulation for buildings, appliances and industrial equipment; about two quads from improved materials processing; and about three quads from improved fuel economy through lightweight materials for transportation.

Biocatalysis: Process energy savings may be possible through the application of biocatalysis because biocatalysts have the ability to carry out exactly the desired reaction in one step (i.e., with no intermediate products) and at mild prevailing reaction conditions (i.e., low temperatures, pressures, reactant concentrations). A variety of nonpetroleum-based renewable or more abundant feedstocks (as many as seven quads available from collectible biomass) could be made available if biochemical processing can be made economically competitive and commercialized. New and improved techniques that would make economically and energetically feasible the use of these alternative nonpetroleum-based feedstocks for the production of industrial chemicals would reduce our demand/dependence on imported fuels and enhance industrial productivity and competitiveness.

Tribology: The interdisciplinary study of friction, lubrication, and wear provides the basis for reducing energy losses inherent in moving machinery parts and equipment breakdown due to periodic or premature failure due to high wear levels. The American Society of Mechanical Engineers' Research Committee on Lubrication has estimated that friction and wear losses in all mechanical systems account for up to seven percent of total annual U.S. energy consumption. Overall, there is opportunity to reduce current friction and wear losses, and energy losses through more efficient operation at optimum conditions (such as in high temperature regimes).

II. A. Summary Table: Energy Conversion and Utilization Technologies

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Combustion				
Engine Combustion Technology..................	$ 4,065	$ 4,635	$ 4,200	- 9
Continuous Combustion..........................	1,200	1,200	1,100	- 8
Subtotal, Combustion	$ 5,265	$ 5,835	$ 5,300	- 9
Thermal Sciences				
Heat and Mass Transfer Research...............	$ 900	$ 1,000	$ 900	- 10
Thermodynamics and Fluid Systems Research.....	1,289	1,030	1,300	+ 26
Subtotal, Thermal Sciences	$ 2,189	$ 2,030	$ 2,200	+ 8
Materials				
Superconducting Materials......................	$ 1,390	$ 1,400	$ 1,400	0
High Temperature Materials.....................	1,250	1,400	1,200	- 14
Materials by Design............................	1,220	1,700	1,300	- 24
Lightweight and Biobased Materials............	920	1,200	900	- 25
Corrosion - Resistant Materials...............	430	500	600	+ 20
Thermally Insulating Materials................	600	460	600	+ 30
Materials Processing Technology...............	2,200	4,100	1,800	- 56
Materials System Reliability..................	320	857	600	- 30
Subtotal, Materials	$ 8,330	$ 11,617	$ 8,400	- 28

II. A. Summary Table: Energy Conversion and Utilization Technologies - Cont'd

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Catalysis/ Biocatalysis				
Bioprocess Engineering	$ 3,376	$ 1,500	$ 1,300	- 13
Catalysis by Design	500	1,655	1,700	+ 3
Applied Microbiology	50	300	300	0
Bioseparations	50	350	300	- 14
Global Warming Emission Remediation	0	50	300	+500
Innovative Chemical Processing	0	100	100	0
Subtotal, Catalysis/ Biocatalysis	$ 3,976	$ 3,955	$ 4,000	+ 1
Tribology				
Tribology by Design	$ 700	$ 800	$ 700	- 13
Engineered Tribological Interfaces	1,483	1,367	1,500	+ 10
Extreme Environment Tribology	800	800	800	0
Subtotal, Tribology	$ 2,983	$ 2,967	$ 3,000	+ 1
Total, Energy Conversion and Utilization Technologies	$ 22,743	$ 26,404	$ 22,900	- 13

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Ames Laboratory	$ 50	$ 0	$ 0	0
Argonne National Laboratory	$ 2,350	$ 1,815	$ 1,540	- 15
Idaho National Engineering Laboratory - EG&G	$ 1,335	$ 700	$ 900	+ 29
Lawrence Berkeley National Laboratory	$ 395	$ 1,260	$ 1,250	- 1
Lawrence Livermore National Laboratory	$ 250	$ 450	$ 250	- 44
Los Alamos National Scientific Laboratory	$ 2,223	$ 2,830	$ 1,950	- 31
Oak Ridge National Laboratory	$ 4,860	$ 4,060	$ 4,000	- 1
Pacific Northwest Laboratory	$ 857	$ 1,520	$ 850	- 44
Sandia National Laboratories	$ 3,001	$ 3,390	$ 3,100	- 9
Solar Energy Research Institute	$ 724	$ 620	$ 1,100	+ 77

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Energy Conversion and Utilization Technologies			
Combustion			
Engine Combustion Technology	Lean Homogeneous Charge Combustion Processes: Continue activities underway in FY 88. Major work is performed to investigate turbulent flame propagation, fuel injection dynamics, and the role of swirl turbulence, and scavenging in Dilute Homogeneous Charge (DHC), and 4- and 2-stroke cycle Direct Injection Stratified Charge (DISC) engine concepts. (SNLL, LANL, LBL, LLNL, Princeton, Imperial College, MIT)	Lean Homogeneous Charge Combustion Processes: Continue FY 89 activities. Major work investigates for lean combustion processes turbulent flame propagation, fuel injection dynamics, and in-cylinder heat transfer. Work will continue to incorporate heat transfer model into KIVA II. (SNLL, LANL, LBL, LLNL, Penn St., Imperial College, MIT, Integral Technologies)	Lean Homogeneous Charge Combustion Processes: Continue FY 90 activities. Effort leads to development of energy efficient, environmentally safe DHC engines. Continue to work with Ford and Chrysler researchers to investigate the effects of dominating fluid mechanical processes on engine processes under lean and dilute charge conditions. (SNLL, LANL, LBL, LLNL, Penn St., Imperial College, MIT, Integral Technologies)
	No Activities.	Stratified Charge Combustion Processes: Conduct DISC 2-stroke cycle processes research. Continue FY 89 activities to increase efficiency and reduce emissions via stratified charge approach. Major work is performed to investigate turbulent flame propagation, fuel injection dynamics and scavenging, and emission processes. Mid-term impact. (SNLL, Princeton, LANL, LLNL)	Stratified Charge Combustion Processes: Continue FY 90 research. Develop KIVA II version for 2-stroke cycle engine concepts. Work with General Motors and Ford researchers to develop comprehensive technology base needed to support DISC engine design. Mid-term impact. (SNLL, Princeton, LANL, LLNL)

Program Activity	FY 1989	FY 1990	FY 1991
Engine Combustion Technology (Cont'd)	Autoignition/Chemical Kinetics: Continue investigation of chemical and physical mechanisms of engine knock phenomena. Perform experiments using static chemical reactors, atmospheric and pressurized flow reactors and research engines to study intermediate temperature chemistry and unsteady heat transfer. Experiments are coupled with detailed chemical kinetic modeling. (SNLL, LLNL, Princeton, Drexel)	Autoignition/Chemical Kinetics: Continue FY 89 activities. Major work focuses on experimental and analytical studies of low and intermediate temperature chemistry. Research will be carried out in static reactors, high pressure flow reactor, and a research engine to quantify the chemical kinetic processes of model engine fuels. (SNLL, LLNL, Drexel, Princeton)	Autoignition/Chemical Kinetics: Continue FY 90 activities to understand and develop approaches to overcome engine knock and to provide insight into the nature of dominant chemical processes affecting additive and fuel blending strategies. Continue to work with fuel industry researchers to develop these strategies. (SNLL, LLNL, Drexel, Princeton)
	Complete initial development of comprehensive heat transfer model validation. Implement model to study and analyze in-cylinder heat transfer processes fundamental to all internal combustion engines at reduced level. (SNLL, LANL)	See Lean Homogeneous Charge Combustion Processes.	No Activities.
	Diesel Combustion/Emission Processes: Continue research to investigate controlling mechanisms of NOX/particulate formation as related to direct injection stratified charge (DISC) and Direct Injection (DI) and low heat rejection diesel engine combustion. Investigations will clarify sources of unburned hydrocarbons in 2- and 4-stroke cycle DISC engine concepts; examine feasibility of decoupling NOX and particulate formation issue by developing comprehensive understanding of exhaust treatments as related to incylinder combustion. Coordinate research with ECUT Tribology and the CE Heavy Duty Transport Program. (SNLL, Princeton, Penn. St., Yale, UTRC, SWRI, PSI Technology, CPG/Techmor, LANL)	Diesel Combustion/Emission Processes: Continue FY 89 research to investigate NOx/particulate formation for DI and low heat rejection diesel engine concepts. Continue research on RAPRENOx process development. (SNLL, Yale, Penn St., UTRC, SWRI, PSI Technology, CPG/Techmor, LANL)	Diesel Combustion/Emission Processes: Continue FY 90 research to develop approaches to eliminate diesel soot particles and reduce NOx emissions. Continue to work with Cummins, Caterpillar, Exxon, and other fuel industry researchers to elucidate design strategies for clean, efficient energy systems. (SNLL, Yale, Penn St., UTRC, SWRI, PSI, CPG/Techmor)

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Engine Combustion Technology (Cont'd)	Perform research to determine feasibility of reducing carbon dioxide emissions emanating from combustion systems to mitigate global warming trend caused by such carbon dioxide and NOx emissions.	Continue research on selected concepts to reduce carbon dioxide emissions from combustion systems. Issue PRDA to effect industrial participation.	No Activities.
	No Activities.	Alternative Fuels Combustion Processes: Initiate research to investigate the combustion and emission characteristics of fuels, e.g. methanol, ethanol, LPG, methane, and hydrogen, for automotive engines and their effect on engine processes. Mid-to long-term impact. (SNLL, TBD)	Alternative Fuels Combustion Processes: Continue FY 90 research to develop needed understanding of alternative fuels chemistry/engine process interactions to meet long-term requirement of future EPA/CAFE standards. Work will continue in cooperation with fuels and engine development industry. (SNLL, TBD)
	$ 4,068	$ 4,635	$ 4,200
Continuous Combustion	Spray Dynamics/Combustion Processes: Continue investigation of effects of fuels' chemical and physical characteristics on spray combustion. Work includes investigation of "group" combustion processes as related to controlled combustion. Fuels research extended to include combustion of industrial, medical and municipal liquid and solid waste products. (SNLL, NIST, LANL, JPL)	Spray Dynamics/Combustion Processes: Conduct research to develop validated computer models for furnace and boiler design. Emphasis is placed on elucidating the dominant physical processes impacted by fuel characteristics and the dynamics of efficient spray and droplet development. (SNLL, NIST, JPL, LANL)	Spray Dynamics/Combustion Processes: Continue FY 90 research to develop better understanding and capability for design of fuel-flexible, energy-efficient, environmentally safe stationary combustors. (SNLL, NIST, JPL, LANL, TBD)
	Pulse Combustion Processes: Continue pulse combustion research. Refine underlying combustion principles and physical processes evident in pulse combustor. Complete comprehensive computer model. Investigate enhanced heat and mass transfer processes in acoustic and pulse combustors. (SNLL, GA Tech.)	Pulse Combustion Processes: Continue pulse combustion research. Focus on liquid fueled systems. Continue to refine comprehensive computer code. Pulse combustors are inherently clean burning, producing less pollutants than conventional combustors. (SNLL, GA Tech.)	Pulse Combustion Processes: Complete research on pulse combustion (a highly efficient combustion technique) with liquid and gaseous fuels. Near to mid-term impact. (SNLL, GA Tech)
	$ 1,300	$ 1,200	$ 1,100

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Subtotal, Combustion	$ 5,265	$ 5,835	$ 5,300
Thermal Sciences			
Heat and Mass Transfer Research	Heat and Mass Transfer Enhancement Mechanisms: Continue experimental and theoretical research on heat and mass transfer mechanisms to investigate enhanced surfaces, direct contact, and convective conductive/radiation heat transfer. (ANL)	Heat and Mass Transfer Enhancement Mechanisms: Continue research on heat and mass transfer mechanisms. Characterize surface enhancement flow and heat transfer mechanisms. (ANL, Clarkson, UC-Davis, TBD)	Heat and Mass Transfer Enhancement Mechanisms: Continue FY 90 activities to increase the efficiency and cost-effectiveness of energy processes/systems through improved heat and mass transfer. Near-to mid-term impact. Work coordinated with OIP. (ANL, Clarkson Univ., TBD)
	Fouling Mechanisms: Continue experimental and theoretical research on fouling to investigate organic fluid fouling, high temperature gas stream fouling and water cooled condenser fouling. (ANL)	Fouling Mechanisms: Continue research on fouling. Experimentally characterize organic fluid fouling for prototypical fluids. (ANL, U. of British Columbia)	Fouling Mechanisms: Continue FY 90 studies to increase efficiency and cost-effectiveness of chemical/petrochemical energy processes and power generation systems through studies of fluid fouling mechanisms. Near-to mid-term impact. Work coordinated with OIP, BCS. (ANL, Univ. of British Columbia, TBD)
	Multi-phase Flow/Heat Transfer: Continue experimental and theoretical research on multiphase flow and heat transfer interactions to investigate flow field and pressure drop in heat exchangers and conduits, flow/structure interaction, and boiling/condensing heat transfer. Work is critical to the study of chlorofluorocarbon (CFC) replacement candidates. (ANL, INEL)	Multi-phase Flow/Heat Transfer: Continue research on multiphase flow and heat transfer interactions. Major activities will investigate two-phase flow experiments for nonazeotropic mixtures. Single channel heat transfer studies will be initiated. Work is critical to investigating chlorofluorocarbon (CFC) working fluid replacement strategies. (ANL, INEL)	Multi-phase Flow/Heat Transfer: Continue FY 90 activities to improve efficiency of energy systems/processes involving multiphase working media. Near to mid-term impact. Supports CFC replacement research. (Work cost shared with Northeast Utilities Co.). (ANL, INEL, TBD)
	$ 900	$ 1,000	$ 900

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Thermodynamics and Fluid Systems Research	Energy Conversion Processes: Continue experimental and theoretical investigation of direct conversion technologies including underlying research for alkali metal heat engines, liquid metal magnetohydrodynamic generators, thermoacoustic and thermionic design concepts. Continue analysis of other candidates. Research forms basis for investigating new refrigeration concepts that do not require chlorofluorocarbon (CFC) working media. (JPL, LANL)	Energy Conversion Processes: Continue direct conversion technology research. Major activity is focused on underlying principles of alkali metal heat engines and liquid metal magnetohydrodynamic (LMMHD) generators. Stretch out research on thermoacoustic and analyses of other candidates. (JPL)	Energy Conversion Processes: Continue FY 90 activities to develop design and optimization analytical tools for energy-efficient alternative energy conversion technologies that do not use CFC working fluids. Mid- to long-term impact. Work is coordinated with research in OIP magnetic heat pump project and in CE Office of Buildings and Community Systems (BCS) programs. (INEL, ORNL, JPL, TBD)
	Energy Conversion Systems Modeling: Continue experimental and theoretical research to investigate advanced compression/expansion processes for heat engines/heat pumps. Develop comprehensive complex flow dynamics and heat transfer process computer model. Initiate experiments for validation. Focus is on rotating geometry and LMMHD concept. (INEL)	Energy Conversion Systems Modeling: Continue activities underway in FY 1989. Work is performed to develop comprehensive multidimensional computer simulation models to investigate critical technical issues for advanced energy conversion cycles. Stretch out completion of conceptual simulation development for advanced magnetic conversion cycles. (INEL, PNL)	Energy Conversion Systems Modeling: Continue FY 90 activities to develop experimentally validated design and analytical computer simulation models of energy efficient, environmentally safe nonconventional energy conversion systems and cycles. Mid to long-term impact. (INEL, PNL, TBD)
	Working Media Research: Continue experimental and theoretical research of pure and multicomponent working fluids for advanced energy conversion systems. Advanced energy conversion systems include magnetic energy conversion and chemical energy conversion processes. Efforts will also investigate nonazeotropic fluid mixtures for heat and mass transfer. (INEL)	Working Media Research: Continue working media research with major emphasis on solid-state media as alternatives to chlorofluorocarbon (CFC) refrigerants. Activities are collaborated with high temperature superconducting materials efforts in ECUT Materials Program. (INEL, PNL)	Working Media Research: Continue FY 90 research to develop working media-by-design concept for energy efficient systems and processes. Research focus is on CFC replacement media, including solid-state and multiphase media. Work coordinated with OIP, BCS research. Near to mid-term impact. (INEL, PNL, TBD)
	$ 1,289	$ 1,030	$ 1,300
Subtotal, Thermal Sciences	$ 2,189	$ 2,030	$ 2,200

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials			
Superconducting Materials	HTSC Assessment: Complete DOE-EPRI assessment of applications potential of high critical temperature superconductor (HTSC) materials.	No Activities.	No Activities.
	Proof of Concept of HTSC Components: Initiate research on fabrication technology and couple with superconducting and mechanical materials capabilities in various configurations needed for selected "building block" components such as motors. (ORNL, PNL, and industrial collaborators)	Proof of Concept of HTSC Components: Expand R&D on HTSC "building-block" components such as novel magnets for patented axial-gap motor and power electronic devices. Increase DOE-industry collaboration. (ORNL, PNL, Boeing Aerospace, EPRI, other TBD)	Proof of Concept of HTSC Components: Continue to develop two kinds of generic devices and components such as magnets and electronics that key to several industrial and transportation systems: refrigeration (payoff in the mid-term) and MAGLEV vehicles (mid- to long-term payoff). New work planned, e.g. magnetocaloric materials (with DOE-OIP) for heat pump/refrigeration. (TBD)
	HTSC Materials Development: Complete HTSC thin film fabrication and stabilization with laser, microwave, and electrochemistry. (ORNL, NCSU)	No Activities.	No Activities.
	No Activities.	Magnetic Field Processing of Materials: Evaluate R&D options for helium-cooled "test-bed" for future HTSC applications, e.g., materials processing in ultra high magnetic fields to achieve unique properties. (TBD)	Magnetic Field Processing of Materials: Initiate research to exploit unique interaction of magnetic fields with transient defects during processing of high electrical conductivity polymers, e.g. for batteries. Mid-term impact on industrial competitiveness. (TBD)
	$ 1,390	$ 1,400	$ 1,400

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
High Temperature Materials	Ordered Intermetallic Alloy (OIA) Technology Base and Technology Transfer: Maintain research on breakthrough obtained in more refractory and corrosion-resistant nickel-aluminum, on whisker-reinforced composites of nickel aluminide, and on technical support for industry. (ORNL, LANL, Case Western Reserve Univer., Univ. of TN, industry)	OIA Technology Base and Technology Transfer: Continue aggressive R&D program and technology transfer of OIAs in conjunction with industry, e.g., corporations licensed for nickel aluminide. Emphasize nickel-aluminum and novel processable composite OIAs. Complete composites task using ceramic whiskers for higher temperature capability. Identify and develop very refractory engineering OIAs. (ORNL, LANL, CWRU, TBD)	OIA Technology Base and Technology Transfer: Maintain highly productive integrated effort with payoff in near-and mid-terms on energy security, (e.g. the leading next-generation material for heavy duty diesel turbocharger rotors). Resolve joining, durability, and other technical issues for nickel aluminide, and evaluate composite, NiAl, and multiphase, multiple strengthened nickel- and iron-based OIAs. (ORNL, industry TBD)
	Structural Ceramics and Composites: Complete strengthening and toughening ceramics in simple shapes through ion implantation and surface damage removal and laminated composite coatings. Continue low-temperature brazing. (ORNL, LBL, UES, HBCU)	Structural Ceramics and Composites: Evaluate engineering potential of braze and surface modification efforts and prospects for starting DOE-laboratory-industry collaboration. (ORNL, UES, other industry TBD).	Structural Ceramics and Composites: Phase out effort. (ORNL, industry TBD)
	$ 1,250	$ 1,400	$ 1,200
Materials by Design	OIA Ductility and Failure: Complete research on atomistic computations of grain boundary strengthening and ductility phenomena in nickel aluminide. Derive structure maps indicating macroalloying directions for other ductile OIAs and atomistic approaches to evaluate OIAs with more complex crystal structure. (LANL, VPI, Carnegie Mellon Univ., Imperial College, ORNL)	OIA Ductility and Failure: Couple modeling and experimentation on refractory nickel, molybdenum-based, and composite OIAs. Corroborate phenomenological maps of crystal structure with surface alloying methods for rapid identification of promising new alloys. Apply atomistic simulation to OIAs for industrial shape memory alloys. (LANL, ORNL, TBD)	OIA Ductility and Failure: Maintain mid- to long-term objective to guide experimental alloy development with predictive models and to aid U.S. in international competition on engineering OIAs. Extend at a reduced level of effort modeling methods for phase stability, ductile vs brittle cracking, explaining empirical "rules of thumb", etc. (LANL, ORNL, TBD)
	No Activities.	Ultra-crack Resistant Ceramics: Couple experiment and range of models to design "next-generation" ceramics needed for harsh energy and industrial plant environments. (LBL, NIST, TBD)	Ultra-crack Resistant Ceramics: Phase-out development of novel ceramic systems with mid- to long-term payoff in nearly all energy conservation sectors.
	$ 1,220	$ 1,700	$ 1,300

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Lightweight and Biobased Materials	Plastics Recycling: Continue modeling and experimentation on the molecular structure level, specifically bond formation, breaking, and re-formation for tertiary recycling of polymeric scrap. (Polytechnic Univ. of N.Y., SERI)	Plastics Recycling: Continue R&D with priority given to "simple" recycling sequences, process and flexibility, and property reproducibility, in order to tailor recycled product based on range of feedstocks. Extend R&D to large volume plastics, e.g., polyesters and sheet molding compounds. Establish industrial consortium. Expand into plastics joining for light-weight advanced vehicles. (Polytechnic Univ. of NY, SERI, other TBD)	Plastics Recyling: Exploit breakthrough on tertiary recycling of thermoset plastics (epoxies and polyimides) by substituting sulfur for carbon bonds. Work with industrial consortium. Determine process flexibility to mixed input plastics e.g., automotive "fluff" and for different outputs. (Polytechnic Univ. of NY, SERI, industry TBD)
	Biobased Plastics (Containing Natural Resins): Determine structure, stability, properties, and biodegradability of dimensionally stable, water resistant polymers and composites from wood precursors, from single microbial reactions, and from starch addition to conventional polymer processing. (SERI, Univ. WI, Purdue, So. MS, VA Poly. Inst. & SU)	Biobased Plastics (Containing Natural Resins): Retain efforts on biodegradation of monolithic polymers and polymer composites with focus on characterizing molecular structure of intermediate species during initial processing and during decomposition. (SERI, Univ.- WI, Purdue, So. MS, VPI&SU)	Biobased Plastics (Containing Natural Resins): Reduce effort on wood-based structural composites to replace energy intensive and environment-incompatible synthetic plastics in the mid-term and continue several near-term concepts for designing and processing biodegradable mixed natural plus synthetic resins for large volume synthetics. (SERI, Univ. - WI, Purdue, So. MS, VPI&SU)
	No Activities.	No Activities.	Novel Polymer Systems: Initiate R&D on inorganic polymers (not derived from fossil fuels) and on molecular-scale composites with range of behavior and stability important to energy conservation and industrial competitiveness, e.g. industrial membranes, precursors for novel ceramics, sensors, etc. Mid to long-term impact. (TBD)
	$ 920	$ 1,200	$ 900

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Corrosion - Resistant Materials	Corrosion - Resistant OIAs: Initiate development of ordered alloys with stability in extreme corrosion environments to make viable industrial processes using highly reactive molten salts or alternative fuels such as combustible industrial waste as feedstocks. (with OIP). (ORNL)	Corrosion - Resistant OIAs: Reduce research on iron-aluminum OIAs, addressing micro- and macro-alloying of iron aluminides to achieve combinations of strength, ductility, fabricability, and corrosion resistance needed Coordinated with OIP. (ORNL)	Corrosion - Resistant OIAs: Focus on technology transfer in evaluating engineering properties and corrosion behavior of iron-aluminum OIAs for heat exchanger for energy-conserving molten-salt process for oxygen production (collaborative with DOE-OIP and with likely payoff in mid-term). (ORNL, APCI)
	Electrodes for Refining Aluminum: Fabricate fiber-toughened titanium diboride and evaluate physical properties.	Electrodes for Refining Aluminum: Complete effort by evaluating composite behavior in industrial prototype cells.	No activities.
	No Activities.	No Activities.	Integrated Coatings Technology: Initiate R&D on new concepts for ceramics and OIA coatings such as coupled biomimetic growth and reaction sintering with impact on energy security and environment maintenance. Integrate with sensor and reliability advances to enable "retrofit-sensitive" design of structures.
	$ 430	$ 500	$ 600
Thermally Insulating Materials	Ceramic Insulation without CFCs: Develop ceramic spherical shells, characterize properties, and consolidate into open (e.g. honey comb) structures. (ORNL, GA Tech)	Ceramic Insulation without CFCs: Stretch out modeling and measure "shell" insulation properties and stability in different environments. Start collaborative efforts with industrial partners to start examining reproducibility of processing for various applications. Initiate R&D on microporous ceramics leading to new class of refrigeration insulations. (GA Tech, LBL, industry TBD)	Ceramic Insulation without CFCs: Expand efforts on hollow ceramic spheres, promising superior high temperature thermal insulating capabilities without the health hazards of fiber-mat or asbestos, and on microporous ceramics for industrial, commercial, and residential refrigeration systems. Increase thermal opacity of ceramic shells, develop inexpensive aqueous processing method, and evaluate application potential. Pilot facility: 100% cost share from Georgia Technology Development program. Near- to mid-term impact on maintaining clean

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Thermally Insulating Materials (Cont'd)			environment. (GA Tech, ORNL, industry TBD)
	$ 600	$ 460	$ 600
Materials Processing Technology	Materials Processing by Design - Rapidly Solidified Metals: Continue research directed at delineating the mechanisms of strengthening; and, the associated kinetics and thermodynamics of gases and alloying elements in structural engineering steels and nickel-base alloys. (INEL, SNLL, U. Wisconsin)	Materials Processing by Design - Rapidly Solidified Metals: Initiate technology transfer for industrial participation in reduced-level R&D on high temperature coatings and bulk materials. (INEL, SNLL, U. WI)	Materials Processing by Design: Conclude rapid solidification work with technology transfer for novel nickel and iron base alloys, with mid- to long-term pay-off for several industrial and transportation systems. Reduce modelling both physical processes and phenomenological issues (e.g., scale-up) for reliable and flexible materials processing, e.g., powder, casting, and gas methods. (INEL, SNLL, U. WI, TBD)
	Microwave Processing of Ceramics: Initiate major research effort on microwave processing of precursors for ceramic powders and on sintering several ceramics to develop this new technique into an enabling technology for component fabrication. (In coordination with OIP and OTS). (LANL, ORNL)	Microwave Processing of Ceramics: Expand effort on microwave processing of powders and monolithic ceramics to include composites and joining. Delineate processing - structure - property relationships to determine acceptable regimes and surface modification and mixed powders to improve microwave coupling. (LANL, ORNL, industry TBD)	Microwave Processing of Ceramics: Focus at lower level of effort on greater reliability in processing complex oxides and non-oxides with mid-term payoff likely for industrial and transportation systems, heat exchangers and engines. Phase-out study of control of chemical reaction and process parameters in powder drying and sintering. Start technology transfer. (LANL, ORNL, industry, TBD)
	Chemical Vapor Deposition of Ceramics: Delineate mechanisms of solid formation and deposition from a wide range of chemically reactive gas streams including those used in a novel proprietary process. Identify key parameters during fabrication of various shapes and of several ceramic systems. (SNLL, TECO)	Chemical Vapor Deposition of Ceramics: Start phase-I research on extremely rapid vapor deposition methods as an alternative to powder processing of ceramics and their composites. Research to model and measure boundary layers and gas-solid interfacial phenomena to discern factors enhancing versus retarding deposition kinetics. (SNLL, TECO)	Chemical Vapor Deposition of Ceramics: Close-out industry-DOE R&D on reinforced silicon carbide composites needed in near term for engine piston-head coatings and mid-term for several high temperature industrial components. Focus on achieving proper distribution and high volume fraction of reinforcing phase. (SNLL, TECO)

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials Processing Technology (Cont'd)	Electrochemical Synthesis of Materials: Begin research to synthesize novel conducting polymers and other materials with highly controlled and tailored properties. (LANL)	Electrochemical Synthesis of Materials: Reduce newly-started effort on design and synthesis of electrically conducting polymers needed for advanced sensors, and other energy conservation applications. (LANL)	Electrochemical Synthesis of Materials: Phase out conducting polymers R&D by identifying role of film porosity and support (during growth) on film properties. With industry, develop electrogalvanized steel with reliable formability and corrosion control. (LBL, LANL)
	Proton Exchange Membrane (PEM) Catalyst: No Activities.	Proton Exchange Membrane (PEM) Catalyst: Initiate R&D on ion exchange processing to achieve order of magnitude finer dispersion of active metal on PEM catalyst (with commensurate reduction of cost. (LANL)	Proton Exchange Membrane (PEM) Catalyst: No activities planned.
	Novel Surface Hardening and Coating Technology: Initiate R&D to couple surface chemical modification and resulting surface-promoted coating from inexpensive aqueous solutions enabling one-step processing of tailored complex coatings. (PNL)	Novel Surface Hardening and Coating Technology: Continue R&D on surface-promoted corrosion-resistant coatings. Initiate R&D on plasma and ion beam surface processing of polymers to enhance surface-sensitive mechanical properties. (PNL,ORNL)	Novel Surface Hardening and Coating Technology: Begin phase-out of both tasks showing new processing paths to protective coatings on metals and for strength and durability of lightweight polymers with near- and mid-term impact in industrial and transportation sectors. (PNL, ORNL)
	Waste Minimization in Materials Processing: No activities.	Waste Minimization in Materials Processing: Initiate concept-definition R&D for selecting, treating, and recovering resources from generic classes of gaseous and liquid waste streams from materials processing. (PNL)	Waste Minimization in Materials Processing: Continue R&D on waste stream treatment and initiate effort developing energy-conserving environment-compatible ceramics and electroplating processing with potential payoff in near- and mid-terms. (LBL, ORNL, PNL, and TBD)
	$ 2,200	$ 4,100	$ 1,800

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials System Reliability	Integrated Sensors and Processing: Start project developing chemically selective acoustic sensors to characterize thin film growth and transition to thick films for monitoring processing performance. (SNL-A)	Integrated Sensors and Processing: Phase down R&D for improved coating fabrication and in-service monitoring as well as for in-situ sensors for electrochemical processing of waste streams. Initiate R&D on composites processing, exploiting new fiftyfold gain in defect detectability with high intensity x-ray beams. Start R&D with industrial consortium developing quality assurance non-contact sensor methodology for titanium refining. (SNLA, LLNL, INEL, industry TBD)	Integrated Sensors and Processing: Apply chemically selective acoustic sensors to ceramic and polymeric coatings. In the near- and mid-term this will improve coating manufacturing yields, and design reliability needed for industrial competitveness. Reduce novel noncontact, nondestructive evaluation of ceramics and metals for mid- to long-term impact on reliable manufacturing. (SNL-A, LLNL, INEL, and TBD)
	$ 320	$ 857	$ 600
Subtotal, Materials	$ 8,330	$ 11,617	$ 8,400
Catalysis/ Biocatalysis			
Bioprocess Engineering	Novel Bioreactor Concepts: Complete research and transfer technology to fermentation industry. Initiate research to employ non-aqueous solvents in novel bioreactors. (JPL, ORNL, Battelle Columbus Laboratory, MIT)	Novel Bioreactor Concepts: Continue research to employ non-aqueous solvents in novel bioreactor to overcome unfavorable product separation energetics inherent to conventional aqueous fermentations. Initiate planning to establish technology base to enable biological processing of waste materials. Initiate development of user-friendly software with near-term impact for design and analysis of bioprocesses. (JPL, ORNL, MIT)	Novel Bioreactor Concepts: Continue research to employ non-aqueous solvents in novel bioreactor to overcome unfavorable production separation energetics inherent to conventional aqueous fermentations. Initiate research on biological processing of waste materials. Mid to long-term impact. Continue development of user-friendly software for design and analysis of bioprocesses. (JPL, ORNL, MIT)
	$ 3,376	$ 1,500	$ 1,300

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Catalysis by Design	Molecular Modeling: Initiate modeling of interatomic potentials to predict enzyme structures and properties. (JPL. Cal. Tech. LANL) $ 500	Molecular Modeling: Continue research to develop interatomic potentials to predict enzyme structures and properties. Initiate national laboratory/industry cooperative research on catalysis-by-design for production of chemicals. (JPL. Cal. Tech. LANL) $ 1,685	Molecular Modeling: Initiate preliminary investigation of monoclonal antibody-based biocatalysts. Initiate design and synthesis of novel or improved enzymes. Mid to long-term impact. Continue research on design of inorganic catalysts for production of chemicals. Long-term impact. (JPL. Cal. Tech. LANL. LBL. TBD) $ 1,700
Applied Microbiology	Designed Microorganisms: Continue research to engineer high productivity micro-organisms. (JPL) $ 50	Designed Microorganisms: Continue research to engineer high-productivity microorganisms. (Cal Tech) $ 300	Designed Microorganisms: Continue research to engineer microorganisms for production of low cost bulk chemicals. Long-term impact. (TBD) $ 300
Bioseparations	Novel Energy Saving Separations: Close out research to bio-recover phosphorous from low-grade ore. (INEL) $ 50	Novel Energy-Saving Separations: Initiate research on novel separation technology to overcome high energy requirements for product recovery from dilute aqueous solutions (mid-term impact). Initiate research to bio-recover phosphates from low-grade ore. (INEL) $ 350	Novel Energy-Saving Separations: Continue research on novel separation technology to overcome high energy requirements for product recovery from dilute aqueous solutions. Continue research to develop scale up data base for phosphate ore bioprocessing process and run it in continuous mode. (INEL. ORNL. U. of Montana) $ 300
Global Warming Emission Remediation	No Activities. $ 0	Carbon Dioxide/Methane Removal: Initiate research on photobioreactors for carbon dioxide removal by microalgae. Long term impact. (TBD) $ 50	Carbon Dioxide/Methane Removal: Continue research on photobioreactors for carbon dioxide removal by microalgae. Initiate research on removal of methane from emission streams using inorganic metal complexes based upon methane oxidase enzymes. Long-term impact. (TBD) $ 300

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Innovative Chemical Processing	No Activities.	Novel Chemical Reactions: Initiate research on a more efficient lower waste product generating electrochemical route dimerization of methane to ethane/ethylene and oxidative/reduction reactions of organic molecules. Mid-term impact. (TBD)	Novel Chemical Reactions: Continue research initiated in FY90 to examine an electrochemical route for dimerization of methane to ethane/ethylene and oxidative/reduction reactions of organic molecules. (TBD)
	$ 0	$ 100	$ 100
Subtotal, Catalysis/	$ 3,976	$ 3,958	$ 4,000
Biocatalysis			
Tribology			
Tribology by Design	Computer Modeling: Maintain research on wear modeling, and design tools; e.g. computer code for low friction gears. (Northwestern, NIST)	Computer Modeling: Continue development of models, design tools, and instrumentation. (Northwestern, NIST)	Computer Modeling: Continue development of models, design tools, and instrumentation. (Northwestern, NIST)
	No Activities.	Initiate Research Opportunity Announcement (ROA) for applied tribology research. (TBD)	Initiate Research Opportunity Announcement (ROA) for applied tribology research. Focus on reducing Diesel engine particulate emissions coming from engine lubricating oil. Near-term impact. (TBD)
	Computer Database: Complete transfer to not-for-profit entity; of "A Computerized Tribology Information System" (ACTIS). (NIST)	Computer Database: Provide ECUT developed data to ACTIS. (NIST)	Computer Database: Provide ECUT developed data to ACTIS. Near-term impact. (NIST)
	Maintain friction & wear (F&W) measurements of ceramic materials. (ORNL)	Maintain level of effort on research on friction & wear of ceramic materials. (ORNL)	Maintain level of effort on research on friction & wear (F&W) of ceramic materials. (ORNL)
	$ 700	$ 800	$ 700

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Engineered Tribological Interfaces	Advanced Lubricants: Maintain research on improved organic lubricants compatable with advanced materials/ceramics. (NIST)	Advanced Lubricants: Maintain research on improved organic lubricants compatable with advanced materials/ceramics. (NIST)	Advanced Lubricants: Maintain research on improved organic lubricants compatable with advanced materials/ceramics. Mid-term impact. (NIST)
	Surface Modification: Continue development of low friction, wear resistant surfaces, using several ion-beam techniques. (ANL)	Surface Modification: Use Ion-Beam Enhanced Deposition (IBED) technique to develop low F&W surfaces. (ANL)	Surface Modification: Continue development of low friction, wear resistant surfaces, using several ion-beam techniques. Mid-term impact. (ANL)
	Characterization of Tribomaterials: Coefficient of Friction, Wear-resistance, Ability of surfaces to be lubricated. (ORNL)	Characterization of Tribomaterials: Characterize tribologic aspects of ceramics, e.g., F&W, ability to lubricate. (ORNL)	Characterization of Tribomaterials: Continue to characterize tribologic aspects of ceramics, e.g., F&W, ability to lubricate. Mid-term impact. (ORNL)
	Emissions Control: Continue engine pollution-reduction research in lubricants and components. (NIST, others TBD)	Emissions Control: Continue engine pollution-reduction research in lubricants and components. (NIST, others TBD)	Emissions Control: Maintain engine pollution-reduction research in lubricants and components. Near-term impact. (TBD)
	$ 1,483	$ 1,367	$ 1,500
Extreme Environment Tribology	TriboMaterials: Maintain research on F&W of ceramics for use in advanced high temperature engines. (ORNL, NIST)	TriboMaterials: Maintain research on F&W of ceramics for use in advanced high temperature engines. (ORNL, NIST)	TriboMaterials: Maintain research on F&W of ceramics for use in advanced high temperature engines to meet environmental protection standards. (ORNL, NIST)
	Lube Delivery Systems: Maintain research in high temperature lube delivery systems. (NIST, Penn. State Univ.)	Lube Delivery Systems: Maintain research in high temperature lube delivery systems. (NIST, Penn. State Univ.)	Lube Delivery Systems: Maintain research in high temperature lube delivery systems. (NIST, Penn. State Univ.)
	$ 800	$ 800	$ 800
Subtotal, Tribology	$ 2,983	$ 2,967	$ 3,000

III. Energy Conversion and Utilization Technologies (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Energy Conversion and Utilization Technologies	$ 22,743	$ 26,404	$ 22,900

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Conservation Program International Research Monitoring

The mission of the Conservation International Research Monitoring (IRM) Program is to monitor and evaluate the current status and future direction of energy-conservation related research and development in foreign countries. The IRM provides information that improves the planning process for R&D within the department and by U.S. industry.

II. A. Summary Table: Conservation Program International Research Monitoring

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Foreign Technology Monitoring, Analysis and Assessment	$ 150	$ 160	$ 180	+ 13
Foreign Research Organization and Policy	10	62	70	+ 13
International R&D Topical Studies	40	75	150	+100
Total, Conservation Program International Research Monitoring	$ 200	$ 297	$ 400	+ 35

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Pacific Northwest Laboratory	$ 200	$ 297	$ 400	+ 35

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Conservation Program International Research Monitoring			
Foreign Technology Monitoring, Analysis and Assessment	Continue foreign technology assessment and development of reference series by country. Focus on West Germany.	Complete West Germany foreign technology reference series. Update Japan book. Initiate Sweden reference series.	Continue foreign technology monitoring, assessments and analyses of conservation-related developments in West Germany and Sweden. Update Germany, Japan information and include in country reference books. Reference books contain pertinent technology assessments and analyses, as well as up-to-date accounting of relevant R&D expenditures. Conduct foreign technology assessments, analyses and seminars, as appropriate; continue to issue IRMonitor. Preliminary technologies: alternative fuels for transportation; indoor air quality; non-CFC technologies for refrigeration and industrial applications; advanced materials processing; carbon dioxide abatement technologies.
	$ 150	$ 160	$ 180
Foreign Research Organization and Policy	Initiate development of organizational and policy analysis for energy conservation in West Germany. To be included in West German reference series.	Complete development initiated in FY 1989. Revise accordingly, information in Japan book. Assess energy conservation related organization and policy for Sweden.	Develop and update information for inclusion in country reference series books on Japan, West Germany and Sweden, and on European Communities activities in anticipation of the unification of Europe forthcoming in 1992.
	$ 10	$ 62	$ 70

III. Conservation Program International Research Monitoring (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
International R&D Topical Studies	Initiate comparison of industrial energy intensity in selected countries. (Pacific Northwest Laboratory)	Complete energy intensity study. Initiate assessment of export potential of DOE-supported advanced conservation technologies. (PNL)	Complete assessment of export potential of DOE-supported advanced conservation technologies. Initiate assessment of Japan's and European Communities' energy intensity and environmental issues/responses. Focus on greenhouse gases impacts including responses to CFC restrictions and CO2 abatement strategies. (PNL)
	$ 40	$ 75	$ 150
Conservation Program International Research Monitoring	$ 200	$ 297	$ 400

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Conservation Program Analysis and Planning

Conservation Program Analysis and Planning (CPAP) provides support to the Deputy Assistant Secretary for Conservation to conduct the activities of the Conservation Program Offices in an integrated manner. CPAP undertakes those activities that address generic and crosscutting technology-limiting problems; it is directed toward understanding the process involved in developing research programs aimed at improving the efficiency of energy-using components, devices, and systems and their capability to use alternative fuels; and it provides a consistent planning framework.

II. A. Summary Table: Conservation Program Analysis and Planning

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Conservation Program Analysis and Planning......	$ 400	$ 297	$ 500	+ 68
Total, Conservation Program Analysis and Planning	$ 400	$ 297	$ 500	+ 68

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Oak Ridge National Laboratory	$ 0	$ 0	$ 100	>999
Pacific Northwest Laboratory	$ 100	$ 200	$ 300	+ 50

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Conservation Program Analysis and Planning	Conduct analyses and reviews of the entire Conservation program and conduct an extensive update of the Conservation Five Year Plan. (Energetics)	Supports a cross-cutting Conservation Multi-Year Plan document and a limited cross-cutting analysis of selected Conservation-wide issues. Continues selected critical program reviews under the auspices of the DAS/C. (Energetics)	Conduct a thorough, well-integrated multi-year planning process. In addition, conduct planning in several important areas affecting energy-efficiency R&D and the Conservation programs. Provide analytic support in reviewing and participating in the analysis of global climate change issues such as carbon dioxide, chlorofluorocarbons, and the potential contribution that energy efficiency and conservation could make. Continue efforts to develop improved techniques for analyzing program impacts on energy use including efforts to develop data inputs to energy modeling activities within the Department. (TBD)
	$ 400	$ 297	$ 500
Conservation Program Analysis and Planning	$ 400	$ 297	$ 500

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Inventions and Innovation

The mission of the Inventions and Innovations Programs is to tap the creative resources of individuals and small businesses in improving national energy supply and utilization. The activities are conducted through two programs: the Energy-Related Inventions Program and the Innovative Concepts Program.

The Energy-Related Inventions Program is jointly operated by the National Institute of Standards and Technology and the Department of Energy to evaluate and support promising energy-related inventions and concepts.

The Innovative Concepts Program actively solicits and supports the very early stage of development of novel concepts related to energy conservation.

II. A. Summary Table: Inventions and Innovation

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Inventions Evaluations..............................	$ 1,850	$ 1,675	$ 1,600	- 4
Inventor Assistance..............................	2,750	2,885	2,950	+ 2
Innovative Concepts..............................	250	335	250	- 25
Total, Inventions and Innovation	$ 4,850	$ 4,895	$ 4,800	- 2

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Pacific Northwest Laboratory	$ 100	$ 100	$ 100	0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Inventions and Innovation			
Inventions Evaluations	Conduct review and technical evaluation of 1,000 of 1,200 invention disclosures submitted. Conduct 6 National Innovation Workshops and support 4 Commercialization Planning Workshops for inventors selected to participate in the program. (National Institute of Standards and Technology (NIST), VA Tech)	Conduct review and technical evaluation of up to 1,200 invention disclosures submitted. Conduct 3 National Innovation Workshops. (NIST)	Conduct review and technical evaluation of 1,000 invention disclosures submitted. (NIST)
	$ 1,880	$ 1,675	$ 1,400
Inventor Assistance	Provide technical development grant support for a maximum of 37 inventors. Provide nonfinancial assistance to those for whom grant funding is not available.	Provide technical development grant support for a maximum of 35 inventors. Provide nonfinancial assistance to those for whom grant funding is not available. Conduct 3 National Innovation Workshops, and support 5 Commercialization Planning Workshops for inventors selected to participate in the program. (VA Tech, inventors TBD)	Provide technical development grant support for a maximum of 35 inventors. Provide nonfinancial assistance to those for whom grant funding is not available. Conduct 6 National Innovation Workshops, and support 4 Commercialization Planning Workshops for inventors selected to participate in the program. (VA Tech)
	$ 2,750	$ 2,885	$ 2,950
Innovative Concepts	Conduct an 18 month cycle complementing the Conservation Buildings program on building retrofit technologies. Award grants in FY 1989, and hold a Building Retrofit Innovative Concepts Fair during early FY 1990. In conjunction with two other Federal agencies, begin planning a new cycle on innovative waste prevention techniques, which complements the work of the Office of Industrial Programs and the ECUT Materials program. Continue to track the technical progress and follow-on funding of innovators funded by the	In conjunction with two other Federal agencies, conduct a 18-month cycle on waste prevention. Award grants in late FY 1990, and make preparations for a Waste Prevention Innovative Concepts Fair in early FY 1991. Begin planning for next cycle in the field of Transportation Systems. Continue to track the technical progress and follow-on funding of innovators funded by the program. (PNL, TBD)	With the assistance of the Office of Transportation Programs, conduct 18-month cycle on reducing chlorofluorocarbons (CFC's) in automotive air-conditioners. Award grants in very late FY 1991, and make preparations for an Innovative Concepts Fair in mid-FY 1992. Continue to track the technical progress and follow-on funding of innovators funded by the program. (PNL, TBD)

III. Inventions and Innovation (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Innovative Concepts (Cont'd)	program. (Pacific Northwest Laboratory (PNL), TBD)		
	$ 250	$ 335	$ 250
Inventions and Innovation	$ 4,850	$ 4,895	$ 4,800

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: National Appropriate Technology Assistance Service

The mission of the National Appropriate Technology Assistance Service (NATAS) is to provide information and technical assistance to the public requesting help in implementing effective and efficient energy technologies.

II. A. Summary Table: National Appropriate Technology Assistance Service

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
National Appropriate Technology Assistance Service	$ 1,400	$ 1,385	$ 1,400	+ 1
Total, National Appropriate Technology Assistance Service	$ 1,400	$ 1,385	$ 1,400	+ 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
National Appropriate Technology Assistance Service	Provide individual engineering, scientific and technical responses to questions on conservation and renewable energy posed by individual homeowners, small businesses, farmers, and non-profit institutions. Respond to approximately 8,000 inquiries. Emphasis is on providing detailed technical assistance to those implementing conservation and renewable energy projects. Develop presentations and magazine articles relating to most frequently requested technical subjects. (National Center for Appropriate Technology)	Provide individual engineering, scientific and technical responses to questions on energy efficiency and renewable energy posed by homeowners, small businesses, farmers and non-profit institutions. Respond to approximately 8,000 inquiries. Emphasis is on providing detailed technical assistance to those implementing energy projects. Develop magazine articles and deliver presentations on renewable energy and energy-efficient technologies. (NCAT)	NATAS activities continue to provide engineering, scientific and technical information in response to inquiries from small businesses, farmers, homeowners, and non-profit institutions. NATAS responds to approximately 8,000 such inquiries annually. NATAS also prepares information materials on specific subjects targeted because of high level interest among clients. (NCAT)
	$ 1,400	$ 1,388	$ 1,400
National Appropriate Technology Assistance Service	$ 1,400	$ 1,388	$ 1,400

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Technology Assessment and Transfer

Two Multi-Sector programs, Energy Conversion and Utilization Technologies (ECUT) and Inventions and Innovation, conduct technology assessment and perform planning and management activities to support ECUT research programs and the development of promising inventions. Technology transfer efforts are developed and implemented to ensure that research results are made available to appropriate individuals, institutions, and industries and to encourage the further development of innovative technology by non-Federal sponsors.

II. A. Summary Table: Technology Assessment and Transfer

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Technical Evaluation, Analysis and Planning.....	$ 450	$ 445	$ 512	+ 15
Technology and Information Transfer.............	482	503	470	- 7
Total, Technology Assessment and Transfer	$ 932	$ 948	$ 982	+ 4

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Argonne National Laboratory	$ 250	$ 250	$ 250	0
Oak Ridge National Laboratory	$ 150	$ 150	$ 150	0
Pacific Northwest Laboratory	$ 0	$ 33	$ 20	- 39

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Technology Assessment and Transfer			
Technical Evaluation, Analysis and Planning	Conduct technical and management analyses to assess the status of the ECUT program and current technology and to plan future ECUT research efforts. (Energetics, Inc.)	Conduct technical analyses, assess technology status, and provide management support to guide current ECUT activities and to plan future activities. (Energetics, Inc.)	Continue analyses of current technical issues. Continue program planning activities to address identified technical and management issues. Provide a small effort in ECUT systems analysis and program appraisal. (Energetics, Pacific Northwest Laboratory, TBD)
	Conduct analyses of the Energy-Related Inventions Program (ERIP) to improve the impact of Federal efforts to develop innovative technology and assist the introduction of novel products and processes into the marketplace. (Oak Ridge National Laboratory)	Continue program evaluation of ERIP and its inventors to determine the most successful approaches for support and development of new inventions. (ORNL)	Continue to monitor the success of ERIP inventors. Continue program evaluation of ERIP and its inventors to determine the most successful approaches for support and development of new inventions. Conduct demonstration project for oil and gas inventions developed through ERIP funding. (ORNL)
	$ 450	$ 445	$ 512
Technology and Information Transfer	Publish the ECUT Bulletin, and access the computer database at the Office of Scientific and Technical Information (OSTI).	No Activities.	No Activities.
	Continue the ERIP initiative to encourage and support State and local activities aimed at promoting decentralized innovation support programs and leveraging Federal funding. Provide support for regional junior inventor programs. (Argonne National Laboratory)	Conduct a solicitation, and award up to 10 grants to State and local inventor organizations whose novel technology transfer methods could be successfully implemented by other such organizations. (ANL, TBD)	Continue the FY 1990 activities of the ERIP State and local initiatives, and conduct another solicitation for State and local innovative technology organizations whose technolgy transfer methods could be successfully implemented by other such organizations. (ANL, TBD)

III. Technology Assessment and Transfer (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Technology and Information Transfer (Cont'd)	No Activities.	Conduct Building Retrofit Innovative Concepts Fair, and disseminate final reports and technology briefs to a targeted mailing list of potential sponsors. Begin planning for multi-agency Innovative Concepts Fair to be held in FY 1991. (PNL)	Conduct Waste Prevention Innovative Concepts Fair with sponsorship from two other Federal agencies and participation from other DOE program offices. Provide technology transfer outreach activities for past and current program participants. (PNL)
	$ 482	$ 503	$ 470
Technology Assessment and Transfer	$ 932	$ 948	$ 982

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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Capital Equipment

Funds will be used to continue upgrading outmoded equipment and to acquire new state-of-the-art equipment for the ECUT Program at the national laboratories and at Historically Black Colleges and Universities (HBCUs) and other universities conducting ECUT research.

II. A. Summary Table: Capital Equipment

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Capital Equipment..................................	$ 980	$ 593	$ 300	- 49
Total, Capital Equipment	$ 980	$ 593	$ 300	- 49

II. B. Major Laboratory and Facility Funding

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Albuquerque Operations Office	$ 154	$ 0	$ 0	0
Argonne National Laboratory	$ 60	$ 0	$ 0	0
Lawrence Livermore National Laboratory	$ 20	$ 0	$ 0	0
Los Alamos National Scientific Laboratory	$ 52	$ 0	$ 0	0
Oak Ridge National Laboratory	$ 41	$ 100	$ 200	+100
Sandia National Laboratories	$ 100	$ 0	$ 0	0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Capital Equipment	Instrumentation for combustion research, thermal sciences, materials research, biocatalysis and tribology.	Instrumentation for wear experiments in tribology, including Fourier transform infra-red (FTIR) detector. Implement ECUT initiative to update national laboratory research equipment. (TBD)	Provide 2.45 GHz, large volume, high field uniformity microwave furnace system and associated power supplies for ECUT Materials program. (ORNL) Provides scanning acoustic microscope for non-destructive testing of sub-surface flaws for ECUT Tribology program. Provide turnable dye laser for combustion experiments. (ORNL, Princeton)
	$ 550	$ 593	$ 300
Capital Equipment	$ 550	$ 593	$ 300

DEPARTMENT OF ENERGY
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KEY ACTIVITY SUMMARY

MULTI-SECTOR

I. Preface: Program Direction

Funding for Program Direction provides salaries and benefits, official travel, and training expenses for staff of the Office of Energy Utilization Research which oversees the activities of the ECUT program and the Inventions and Innovation Programs. The staff is highly trained in the sciences and engineering to manage advanced research activities and a wide range of energy-related inventions, augmented by staff to perform technology transfer and information dissemination, program analysis and administration, and clerical functions.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction................................	$ 1,178	$ 1,193	$ 1,178	- 1
Total, Program Direction	$ 1,178	$ 1,193	$ 1,178	- 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provide funding for 18 FTE's for the ECUT and Inventions programs.	Provide funding for 19 FTE's for the ECUT and Inventions programs.	Provide funding for 17 Multi-Sector FTE's for ECUT and Inventions and Innovation Programs.
	$ 1,175	$ 1,193	$ 1,175
Program Direction	$ 1,175	$ 1,193	$ 1,175

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OBJECT CLASS SUMMARY

Multi-Sector

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent....................	$883	$958	$893
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	88	96	89
11.9 Total personnel compensation...........	971	1,054	982
12.1 Civilian personnel benefits............	97	105	98
21.0 Travel and transportation of persons...	103	32	92
25.0 Other services.........................	30,529	34,228	30,985
31.0 Equipment..............................	550	593	300
32.0 Land & structures......................	0	0	0
Totals......................................	$32,250	$36,012	$32,457

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ENERGY CONSERVATION
(dollars in thousands)

LEAD TABLE

FACILITIES

Activity	FY 1989	FY 1990	FY 1991 Base	FY 1991 Request	Program Change Request vs. Base Dollar	Program Change Request vs. Base Percent
Facilities-Construction						
Combustion Research Facility (CRF) Number 87-R-405	$ 0	$ 0	$ 0	$ 4,000	$ +4,000	+100%
Materials Science Facility, Northwestern University, Project Number 88-C106	$10,000	$ 0	$ 0	$ 0	$ 0	0%
Center for Complex Systems (formerly Energy and Natural Resources Technology Development Center), Brandeis University Project Number 89-C101	$ 3,000	$ 0	$ 0	$ 0	$ 0	0%
Total Facilities	$13,000	$ 0	$ 0	$ 4,000	$ +4,000	+100%
Staffing (FTE's)	0	0	0	0		

Authorizations:

- P.L. 95-91, "Department of Energy Organization Act", Section 20
- P.L. 93-438, "Energy Reorganization Act of 1974"

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SUMMARY OF CHANGES

Facilities

FY 1990 Appropriation	$ 0
Adjustments	0
FY 1991 Base	$ 0
Combustion Research Facility, Phase II	+ 4,000
FY 1991 Congressional Budget Request	$ 4,000

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KEY ACTIVITY SUMMARY

FACILITIES

I Preface: Facilities

The goal of this program is to provide for facilities to support the Conservation R&D mission. Also, funds appropriated for construction grants for university projects are implemented as required by law.

II. A. Summary Table: Facilities

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Combustion Research Facility.....................	$ 0	$ 0	$ 4,000	+100
Materials Science Facility, Northwestern University....................................	10,000	0	0	0
Center for Complex Systems (formerly Energy and Natural Resources Technology Development Center), Brandeis University..................	3,000	0	0	0
Total, Facilities	$ 13,000	$ 0	$ 4,000	+100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Facilities			
Combustion Research Facility	No Activities.	No Activities.	Phase II of the Combustion Research Facility (CFR) will add approximately 32,300 gross square feet to the existing 51,100 square-foot multibuilding facility at Sandia National Laboratories, Livermore (SNLL). Twenty-one thousand, two hundred square feet will be added to the existing 16,400 square-foot laboratory building and 11,100 square feet to the existing 25,000 square-foot office building. This project will add vitally needed capacity and important new capabilities to the Combustion Research Facility at Sandia National Laboratories, Livermore, California. The principal objective of this construction is to provide combustion research resources that can adequately deal with the critical needs of the 1990s. To accomplish this goal requires the addition of a new laboratory wing that emphasizes centralized next-generation laser diagnostic facilities and specially designated laboratories not available in CFR Phase I. The construction project data sheet provides more detailed information.
	$ 0	$ 0	$ 4,000

III. Facilities (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Materials Science Facility, Northwestern University	A grant was awarded and funds obligated for the design and initial construction of the Materials Science Facility of Northwestern University's Basic Industry Research Institute. The facility will house the Department of Materials Science and Engineering for the study of solid state physics, polymer science, ceramics, metallurgy, geophysics, biophysics, biomaterials and electronic materials. The approximately 100,000 gross square foot facility will demonstrate innovative technologies for increasing energy efficiency in buildings, and will provide research laboratories, offices, teaching facilities, and related support space.	Continue construction activities. Complete building structure and closure.	Complete the construction of the facility by the end of the fiscal year.
	$ 10,000	$ 0	$ 0
Center for Complex Systems (formerly Energy and Natural Resources Technology Development Center), Brandeis University	A grant was awarded and funds obligated for the construction of approximately 90,000 square feet of space for laboratories, a science library, offices, seminar rooms, a computer room, and space for related support services at Brandeis University. Thiq facility will combine at a unified location, the programs of computer science and artificial intelligence, cognitive science and perception, neuro science and structural biology. This arrangement will facilitate research efforts to develop novel programs in computer system modeling, parallel computing, and advanced energy and natural resources development technologies.	Building design scheduled for completion.	Construction partially completed by the end of the fiscal year.
	$ 3,000	$ 0	$ 0

III. Facilities (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Facilities	$ 13,000	$ 0	$ 4,000

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OBJECT CLASS SUMMARY

Facilities

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent	$0	$0	$0
11.3 Other than full-time permanent	0	0	0
11.5 Other personnel compensation	0	0	0
11.9 Total personnel compensation	0	0	0
12.1 Civilian personnel benefits	0	0	0
21.0 Travel and transportation of persons	0	0	0
25.0 Other services	0	0	0
31.0 Equipment	0	0	0
32.0 Land & structures	13,000	0	4,000
Totals	$13,000	$0	$4,000

OVERVIEW

STATE AND LOCAL ASSISTANCE PROGRAMS

The goal of the State and Local Assistance Programs is to encourage energy efficiency initiatives on the state and local level through a mix of activities and programs, including direct financial assistance, personalized information services, technical assistance, and developmental demonstration projects to enhance state and private sector involvement in energy conservation. The Office of State and Local Assistance Programs administers the following programs in support of its goal:

- The Weatherization Assistance Program (WAP);
- The Schools and Hospitals Grants Program, also known as the Institutional Conservation Program (ICP);
- The Energy Policy and Conservation Act (EPCA) Grants, also known as the State Energy Conservation Program (SECP); and
- The Energy Extension Service (EES).

The first two programs were established to provide assistance to sectors of the economy which experience particular difficulty in dealing with rising energy costs. WAP increases the energy efficiency of residencies occupied by low-income citizens across the country, particularly the homes of the elderly and the handicapped. ICP provides 50 percent cost shared matching grants to non-profit schools and hospitals. SECP and EES were established to provide funding to the States and Territories, with a cost share of 20 percent, for a variety of comprehensive energy efficiency activities, and to build a capacity within and among the States and Territories to plan, develop and carry out their own energy conservation and outreach programs.

The OSLAP programs have produced significant cost shared energy savings and other benefits in the near term and, taken together, have had an impact on large segments of the population nationwide.

- ICP has supported energy efficiency activities in over 60,000 school and hospital buildings. Cumulative energy savings from FY 1980-1988 are estimated to be 0.4 quads. Cumulative energy cost savings are estimated to be $2.3 billion, three times greater than the Federal funding investment.

- Over 1.9 million low-income homes have been weatherized through WAP. Average estimated home heating energy savings are estimated at 14% for each home weatherized.

- SECP and EES have led to the establishment of an energy planning network at the State and local level, and, through the outreach and educational activities carried out by States, they have assisted in encouraging an energy conservation ethic across the country.

Appropriated and Petroleum Overcharge Distribution and Restitution Act funds provided for OSLAP programs in FY 1989 total $211,195,000. These funds will provide for the weatherization of approximately 100,000 homes, grants to more than 800 schools and hospitals, and grants to states and territories to continue statewide energy conservation and outreach programs, as well as for program management of prior year Federal grants and oversight and monitoring of Exxon and Stripper Well oil overcharge funds distributed to the States.

The FY 1991 Congressional Budget Request for the State and Local Assistance Programs is $30,000,000. Adequate resources for these programs remain from oil overcharge funds distributed to the States. To maximize funds available for low-income weatherization, funds are requested for the Weatherization Assistance Program to stimulate program innovation and leverage non-governmental funds for program activities. Program direction funds requested will provide support for 147 FTE at DOE headquarters and in the field offices to provide management and oversight of prior year Federal grants and oil overcharge funds, and 46 support staff currently assigned by and charged to the Operations Offices to provide administrative support for program operations. Additionally, Program Direction funds are requested for a comprehensive national evaluation of actual energy savings and cost effectiveness of the Weatherization Assistance Program, as well as technical assistance and technology transfer activities in support of the States' energy efficiency programs.

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LEAD TABLE

State and Local Assistance Programs

Activity	FY 1989	FY 1990	FY 1991 Base	FY 1991 Request	Program Change Program Change Request vs. Base Dollar	Percent
Weatherization:						
BA	$115,193	$129,196	$129,196	$15,000	$-114,196	-88%
PODRA	46,164	32,768	32,768	0	-32,768	-100%
Subtotal	$161,357	$161,964	$161,964	$15,000	$-146,964	-91%
Schools and Hospitals:						
BA	$ 17,958	$ 20,141	$ 20,141	$ 0	$ -20,141	-100%
PODRA	7,198	5,109	5,109	0	-5,109	-100%
Subtotal	$ 25,156	$ 25,250	$ 25,250	$ 0	$ -25,250	-100%
EPCA Grants:						
BA	$ 6,795	$ 7,622	$ 7,622	$ 0	$ -7,622	-100%
PODRA	2,724	1,933	1,933	0	-1,933	-100%
Subtotal	$ 9,519	$ 9,555	$ 9,555	$ 0	$ -9,555	-100%
Energy Extension Service:						
BA	$ 2,835	$ 3,177	$ 3,177	$ 0	$ -3,177	-100%
PODRA	1,133	806	806	0	-806	-100%
Subtotal	$ 3,968	$ 3,983	$ 3,983	$ 0	$ -3,983	-100%

LEAD TABLE

STATE AND LOCAL ASSISTANCE PROGRAMS (CONT.)

Activity	FY 1989	FY 1990	FY 1991 Base	FY 1991 Request	Program Change Request vs. Base Dollar	Program Change Request vs. Base Percent
Program Direction						
Operating Expenses	$ 11,195	$ 16,713	$ 16,713	$ 15,000	-$1,713	-10%
Subtotal	$ 11,195	$ 16,713	$ 16,713	$ 15,000	-$1,713	-10%
TOTAL	$211,195	$217,465	$217,465	$ 30,000	-$187,465	-86%
Summary						
Operating Expenses	$211,195	$217,465 1/	$217,465	$ 30,000	-$187,465	-86%
Use of Petroleum Overcharge Distribution Funds	$-57,218	$-40,616	$-40,616	$ 30,000 2/		
TOTAL New Budget Authority	$153,977	$176,849	$176,849	$ 0	-$176,849	-100%
Staffing (FTE's)	183	180	180	147		

Authorizations:

- P.L. 95-39, "National Energy Extension Service Act, Title V"
- P.L. 94-163, "Energy Policy and Conservation Grant Program" (Energy Policy and Conservation Act)
- P.L. 95-385, "Energy Conservation and Production Grant Program" (Energy Conservation and Production Act)
- P.L. 95-619, "Schools and Hospitals Grants Program" (National Energy Conservation Policy Act, Sec. 301-304)
- P.L. 95-619, "Other Local Government Buildings Grants Program" (National Energy Conservation Policy Act, Sec. 310-312)
- P.L. 94-358, "Weatherization Assistance Program" (Energy Conservation and Production Act, Sec. 411)
- P.L. 95-91, "Department of Energy Organization Act" (Development Act of 1974)
- P.L. 95-91, "Department of Energy Organization Act," Sec. 301

1/ The grant figures represent the final Gramm-Rudman-Hollings sequestration decision. States will be receiving these amounts as soon as they are processed.

2/ This figure is included for planning purposes only. The Office of Hearings and Appeals will provide an estimation of Petroleum Overcharge Distribution and Restitution Act (PODRA) funding in March 1990.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

State and Local Assistance Programs

FY 1990 Appropriation	$219,900
Adjustments	-2,435
FY 1991 Base	$217,465
Weatherization	
- Incentive grants to states	-146,964
Schools and Hospitals	
- No new grant funds requested	-25,250
EPCA Grants	
- No new grant funds requested	-9,555
Energy Extension Service	
- No new grant funds requested	-3,983
Program Direction	
- Slightly reduced funds for technical assistance	-1,713
FY 1991 Congressional Budget Request	$ 30,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

STATE AND LOCAL ASSISTANCE PROGRAMS

I. Preface: Weatherization Assistance Program

The Weatherization Assistance Program increases the energy efficiency of residences occupied by low-income citizens across the country, particularly the homes of the elderly and the handicapped.

It is estimated that approximately 19.6 million households at or below 125% of the poverty level are eligible to receive assistance under this program. Low-income households are least able to respond effectively to the market signal of higher prices by making energy conservation investments. Through FY 1989, over 1.9 million low-income homes were weatherized under this program with Federal appropriations. Estimated heating energy savings average an estimated 14% per home weatherized. In addition to the funding provided, WAP undertakes significant activities in the areas of policy guidance; networking and information sharing; client education; and other technical assistance to enhance the efficiency and effectiveness of the program. WAP's technical initiatives are focusing on improved techniques to identify and install the most cost-effective measures for low-income persons in single family dwellings, multi-family residences and mobile homes under various climatic conditions. WAP has produced extensive client education materials and works with States and local program implementers to support client education activities. In FY 1990-1991, WAP will conduct a comprehensive assessment of program impacts and cost effectiveness. To maximize the funds available for low-income weatherization activities, in view of the large number of homes needing assistance, in the upcoming year, WAP will provide incentive funds for states to stimulate program innovation and leveraging of non-Federal funds.

II. A. Summary Table: Weatherization Assistance Program

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Weatherization Assistance Program...............	$ 161,357	$ 161,964	$ 15,000	- 91
Total, Weatherization Assistance Program	$ 161,357	$ 161,964	$ 15,000	- 91

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Weatherization Assistance Program			
Weatherization Assistance Program	Continue training and technical assistance activities. Continue to optimize program delivery procedures. Continue to emphasize client education and innovative financing programs. Focus technical initiatives on improved techniques to identify and install the most cost-effective measures for low-income persons in single family dwellings, multi-family residences, and mobile homes under various climatic conditions. Weatherize approximately 125,000 low-income homes. Total obligational authority of $163,042 includes $161,357 BA/PODRA and $1,685 in FY 1988 unobligated carryover.	Continue training and technical assistance activities. Continue to optimize program delivery procedures, and encourage States to try new approaches to program delivery. Continue to emphasize client education and innovative financing programs. Encourage States to leverage and integrate funding from a variety of non-federal resources. Focus technical initiatives on improved techniques to identify and install the most cost-effective measures for low-income persons in single family dwellings, multi-family residences, and mobile homes under various climatic conditions. Conduct national evaluation of program operation and impacts. Weatherize approximately 120,000 low-income homes.	Provide for incentive funding to stimulate grantee program innovation and leveraging of funds not otherwise available for State weatherization programs. Provide funding for State proposals to test innovative approaches to low-income weatherization, to be selected competitively. Results to be documented and shared with all grantees. Successful innovations may be incorporated into base program. ($5,000) Provide for a leveraging initiative to generate $20 million to $30 million from non-governmental sources (utility and private sector funds). These funds will be used to increase the number of homes weatherized by 15,000 to 20,000. ($10,000)
	$ 161,357	$ 161,964	$ 15,000
Weatherization Assistance Program	$ 161,357	$ 161,964	$ 15,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

STATE AND LOCAL ASSISTANCE PROGRAMS

I. Preface: Schools and Hospitals

The Schools and Hospitals Grants Program, also known as the Institutional Conservation Program, was established to support energy conservation initiatives in the institutional building sector. Public and private non-profit institutions use significant amounts of energy, the cost of which represents a large proportion of their operating budgets. As a result, energy conservation measures can result in significant energy and economic savings. ICP provides matching, 50 percent cost-shared grants for energy analyses and energy saving capital improvements in schools and hospitals.

Through ten grant cycles, ICP has awarded over 22,178 grants to support energy efficiency activities in 60,626 institutional buildings. From 1980-1988, estimated cumulative energy savings resulting from program activities are $2.3 billion, three times greater than the Federal funding investment.

In addition to grants provided, ICP has carried out a multi-year strategy to address the energy management financing, information, and expertise needs of institutions through leveraging non-Federal funds. As part of this strategy, ICP has carried out information sharing and networking activities at the National level, and has provided funding to 12 States to carry out innovative developmental projects in information networking and technology transfer; financing options and financial counseling; and training and energy mangement expertise. Results from the developmental projects are being transferred to other States which might be interested in carrying out similar activities.

II. A. Summary Table: Schools and Hospitals

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Schools and Hospitals............................	$ 25,156	$ 25,250	$ 0	-100
Total, Schools and Hospitals	$ 25,156	$ 25,250	$ 0	-100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Schools and Hospitals			
Schools and Hospitals	Building on activities begun in prior years, continue multi-year strategy to address the energy management financing, information, and expertise needs of institutions through leveraging non-Federal resources. As part of this strategy, provide funding to 12 States for innovative developmental projects. Carry out information sharing and networking activities at the National level. Award approximately 900 grants covering 2,270 buildings. Total obligational authority of $34,888 reflects $25,156 BA/PODRA and $9,732 in unobligated carryover.	Continue sharing results of the 12 State innovative program development projects. Continue information sharing and networking activities, primarily through utilities and appropriate private sector associations. Complete development of computer analysis model to apply to pre/post energy consumption in institutional buildings that have implemented energy conservaiton measures. Test completed model. Award approximately 800 grants covering 1500 institutional buildings.	No new grant activities.
	$ 25,156	$ 25,250	$ 0
Schools and Hospitals	$ 25,156	$ 25,250	$ 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

STATE AND LOCAL ASSISTANCE PROGRAMS

I. Preface: EPCA Grants

The EPCA Grants Program, also known as the State Energy Conservation Program (SECP), provides States with the means to plan, establish and implement programs to reduce energy consumption. States provide a 20 percent cost share for this program. Fifty States, D.C., and 6 Territories have developed energy efficiency plans, and are implementing and evaluating specific programs.

SECP provides the States with flexibility in program design, so programs implemented under SECP are diverse, innovative and responsive to the specific needs of each State. In addition to financial assistance, SECP has provided broad-based technical assistance to the States in developing and implementing their plans and programs. This technical assistance has included an information clearinghouse on successful state programs, training materials, seminars and workshops, and networking and peer exchange opportunities. Cumulative energy savings from SECP, based on energy savings reports submitted by the States, are estimated to be 4.23 quads through FY 1987. In addition to specific energy savings, SECP has led over the years to the establishment of a nationwide network at the State level for energy planning and programs, and energy emergency planning and response.

II. A. Summary Table: EPCA Grants

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
EPCA Grants..	$ 9,519	$ 9,555	$ 0	-100
Total, EPCA Grants	$ 9,519	$ 9,555	$ 0	-100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
EPCA Grants			
EPCA Grants	Continue to provide grants to 50 States, D.C. and 6 Territories to continue energy efficiency programs. Assist States in developing increased program planning, evaluation and monitoring skills. Total obligational authority of $9,963 includes $9,519 BA/PODRA and $444 of FY 1988 unobligated carryover.	Continue to provide grants to 50 States, D.C. and 6 Territories to continue energy efficiency programs. Assist States in developing increased program planning, evaluation and monitoring skills. Renew program emphasis on technology transfer, and further explore leveraging strategies. Develop capability to respond and assist States when natural disasters occur, working within existing grants.	No new grant activities.
	$ 9,519	$ 9,555	$ 0
EPCA Grants	$ 9,519	$ 9,555	$ 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

STATE AND LOCAL ASSISTANCE PROGRAMS

I. Preface: Energy Extension Service

Through the States, the Energy Extension Service (EES) provides personalized information, technical assistance, and on-site information to small-scale energy users, such as homeowners, small businesses, and local governments, to help them decide what are their most effective and productive energy efficiency and renewable energy options. States provide a 20 percent cost share for this program.

Under EES, States plan, implement and manage specialized service and information programs such as energy audits, self-help workshops, "how-to" workbooks and publications. States have flexibility in program design so that the services offered under EES are diverse, innovative, and responsive to local needs. EES has functioned as an integrating and coordinating mechanism for existing resources and delivery mechanisms, providing new/updated information and sound technical advice. EES has also provided a referral service to assist States and energy consumers. DOE offers technical assistance to States in the planning and implementation of their programs. Most recently, DOE has developed strategies to market energy information services to business and commercial sectors.

II. A. Summary Table: Energy Extension Service

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Energy Extension Service........................	$ 3,988	$ 3,983	$ 0	-100
Total, Energy Extension Service	$ 3,988	$ 3,983	$ 0	-100

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Energy Extension Service			
Energy Extension Service	Continue to provide grants to 50 States and 6 Territories to continue energy efficiency outreach programs. Assist States in developing increased program planning, evaluation and monitoring skills. Total obligational authority of $4,184 includes $3,988 BA/PODRA and $196 in FY 1988 unobligated carryover.	Continue to provide grants to 50 States and 6 Territories to continue energy efficiency outreach programs. Act as vehicle for dissemination of energy information and policies. Assist States in further development of program planning, implementation and evaluation skills.	No new grant activities.
	$ 3,988	$ 3,983	$ 0
Energy Extension Service	$ 3,988	$ 3,983	$ 0

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

STATE AND LOCAL ASSISTANCE PROGRAMS

I. Preface: Program Direction

Program Direction funds provided for the Office of State and Local Assistance Programs provide salaries and expenses for program staff at Headquarters and in the field offices to provide administration and oversight of the grants programs, and to provide support and technical assistance to the States. These funds also provide for monitoring of Federally funded grants, and those carried.out with oil overcharge funds (as ordered by the Courts, to prevent waste, fraud, and abuse, and to ensure that restitution is provided to citizens injured by oil overcharges). Technology transfer and technical assistance are also provided to the States and other client sectors, such as training for States in monitoring of oil overcharge projects, information sharing among States, technical support for demonstration projects, and technical studies and analyses of conservation options in the various client sectors. These funds also suport advisory board activities, and provide resources to respond to Congressionally-mandated reporting requirements.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Salaries and Related Expenses....................	$ 8,650	$ 10,650	$ 11,877	+ 12
Contractual Services including Monitoring.......	2,500	6,063	3,123	- 48
National Consumer Law Center.....................	45	0	0	0
Total, Program Direction	$ 11,195	$ 16,713	$ 15,000	- 10

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Salaries and Related Expenses	Provide salaries and expenses for 183 FTE at Headquarters & DOE field offices for activities described above. Also provide oversight and monitoring of PVE activities.	Provides salaries and expenses for 180 FTE at Headquarters and DOE field offices to carry out program oversight, technical assistance activities, as well as monitoring oversight and of PVE activities.	Provides salaries and expenses for 147 FTE for program staff at Headquarters and DOE Support Offices to carry out program oversight and monitoring of PVE activites. Also provides salaries and expenses for 46 FTE currently assigned by and charged to the DOE's Operations Offices to provide administrative support services vital to the operation of the programs.
	$ 8,650	$ 10,650	$ 11,877
Contractual Services including Monitoring	Provide contract support for monitoring grants.	Monitor prior year program grants and those funded with oil overcharge funds as directed by the Courts, to prevent waste, fraud and abuse. Provides funds to disseminate information on energy conservation technologies and strategies to States and other client sectors where energy efficiency can be improved, thus increasing private sector involvement in energy conservation. Provides funds to begin a national evaluation of energy savings and cost-effectiveness of the Weatherization Assistance Program. Provides funds for advisory board support, response to Congressionally-mandated reporting requirements, field office support for technical review of grant applications, and program evaluation. Also provides funds for intra-Departmental logistical support for DOE principals.	In addition to program monitoring, provides reduced funds to disseminate information on energy conservation technologies to States and other client sectors. National evaluation of the Weatherization Assistance Program will be completed. Also provides funds for advisory board support, response to Congressionally-mandated reporting requirements, field office support for technical review of grant applications, and other training and technical assistance activities. Intra-Departmental logistical support for DOE principals will be provided. Supports energy emergency planning activities at the State level.
	$ 2,500	$ 6,083	$ 3,123

III. Program Direction (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
National Consumer Law Center	Provide funds for quarterly reports on States' use of Exxon and Stripper Well oil overcharge funds. Total obligational authority of $12,153 included $11,195 in new BA and $958 in FY 1988 unobligated carryover.	No activities.	No activities.
	$ 45	$ 0	$ 0
Program Direction	$ 11,195	$ 16,713	$ 15,000
Total State and Local Assistance Programs	$211,195	$217,465	$30,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Obligations in thousands of dollars)

OBJECT CLASS SUMMARY

State & Local

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent....................	$6,254	$8,305	$9,140
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	761	831	914
11.9 Total personnel compensation...........	7,015	9,136	10,054
12.1 Civilian personnel benefits............	1,047	914	1,005
21.0 Travel and transportation of persons...	588	600	818
25.0 Other services.........................	2,545	6,063	3,123
31.0 Equipment..............................	0	0	0
32.0 Land & structures......................	0	0	0
41.0 Grants.................................	200,000	200,752	15,000
Totals......................................	$211,195	$217,465	$30,000

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(in thousands of dollars)

LEAD TABLE

Policy and Management - Energy Conservation

Activity	FY 1989	FY 1990	FY 1991 Base	FY 1991 Request	Program Change Request vs. Base Dollar	Program Change Request vs. Base Percent
Operating Expenses						
Operating Expenses	$ 1,785	$ 3,464	$ 3,464	$ 3,467	$ +3	$ 0%
Subtotal	$ 1,785	$ 3,464	$ 3,464	$ 3,467	$ +3	$ 0%
TOTAL	$ 1,785	$ 3,464	$ 3,464	$ 3,467	$ +3	$ 0%
Summary						
Operating Expenses	$ 1,785	$ 3,464	$ 3,464	$ 3,467	$ +3	$ 0%
Total Program	$ 1,785 1/	$ 3,464 2/	$ 3,464	$ 3,467	$ +3	$ 0%
Staffing (FTE's)	22	21	21	13		

Authorization:
- P.L. 95-91, "Department of Energy Organization Act," Section 20

1/ FY 1989 Appropriation totaled $2,664 of which $210 was reprogrammed to support headquarters automation and $669 reflects an appropriation transfer to support the Small Business Innovation Research Program for FY 1989 in accordance with P.L 97-219.

2/ FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSERVATION AND RENEWABLE ENERGY
ENERGY CONSERVATION
(dollars in thousands)

SUMMARY OF CHANGES

Policy and Management

FY 1990 Appropriation	$ 3,503
Adjustments	-39
FY 1991 Base	$ 3,464
Operating Expenses	
The increase is attributed to contractual services	+ 3
FY 1991 Congressional Budget Request	$ 3,467

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

POLICY AND MANAGEMENT - ENERGY CONSERVATION

I. Preface: Policy and Management - Energy Conservation

Staffing levels provide the executive and overall program direction for all CE programs to ensure effective management. These activities include executive management, policy formulation, program review and approval, and liaison with senior officials in DOE, White House, Congressional, OMB, other Departmental Agencies, private industry, and State and local governments. In addition, the staff will carry out analyses of the CE programs needed to assess performance and effectiveness.

II. A. Summary Table: Policy and Management - Energy Conservation

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Salaries and Contractual Services..............	$ 1,785	$ 2,184	$ 2,317	+ 7
Small Business Innovation Research..............	0	1,300	1,150	- 12
Total, Policy and Management - Energy Conservation	$ 1,785	$ 3,484	$ 3,467	0

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Policy and Management - Energy Conservation			
Salaries and Contractual Services	Policy and Management provides overall management guidance. Provides 22 FTEs for liaison with senior officials in DOE, Congress, the White House, OMB, and other Agencies as well as state and local governments. Provides analyses of CE programs needed to assess performance and effectiveness.	Policy and Management provides overall management guidance. Provides 21 FTEs for liaison with senior officials in DOE, Congress, the White House, OMB, and other Agencies as well as state and local governments. Provides analyses of CE programs needed to assess performance and effectiveness.	Policy and Management provides overall management guidance. Provides 13 FTEs for liaison with senior officials in DOE, Congress, the White House, OMB, and other Agencies as well as state and local governments. Provides analyses of CE programs needed to assess performance and effectiveness.
	$ 1,017	$ 1,295	$ 1,380
	Provides for contract support to assist in crosscutting, CE-wide planning, policy development, program review and evaluation, budget formulation and execution, personnel management, and administrative support.	Provides for contract support to assist in crosscutting, CE-wide planning, policy development, program review and evaluation, budget formulation and execution, personnel management, and administrative support.	Provides for contract support to assist in crosscutting, CE-wide planning, policy development, program review and evaluation, budget formulation and execution, personnel management, and administrative support including Automated Office Support Systems (AOSS) funding for CE program offices.
	$ 768	$ 889	$ 957
Small Business Innovation Research	A total of $900 was appropriated and included in an appropriation transfer to support the Small Business Innovation Research Program (SBIR). The total FY 1989 SBIR assessment based on the FY 1989 appropriations was $1,475,000.	A total of $1,300,000 is appropriated to support the Small Business Innovation Research Program (SBIR) assessment.	A total of $550 is earmarked to help support the assessment for the Small Business Innovation Research Program (SBIR).
	$ 0	$ 1,300	$ 1,150
Policy and Management - Energy Conservation	$ 1,785	$ 3,484	$ 3,487

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION
(Obligations in thousands of dollars)

OBJECT CLASS SUMMARY

Policy and Management

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time permanent....................	$763	$947	$1,001
11.3 Other than full-time permanent.........	0	0	0
11.5 Other personnel compensation...........	75	94	98
11.9 Total personnel compensation...........	838	1,041	1,099
12.1 Civilian personnel benefits............	104	129	136
21.0 Travel and transportation of persons...	75	125	125
25.0 Other services.........................	768	2,169	2,107
31.0 Equipment..............................	0	0	0
32.0 Land & structures......................	0	0	0
Totals......................................	$1,785	$3,464	$3,467

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY CONSERVATION

STAFF SUMMARY
Distribution of FTE's
ENERGY CONSERVATION

	Full-Time Equivalents		
	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Energy Conservation:			
Buildings and Community Systems	58	61	51
Industrial Energy Conservation	28	35	30
Transportation	30	36	30
Multi-Sector	18	19	17
State and Local Programs	52	46	30
Policy and Management	22	21	13
Subtotal, Headquarters	208	218	171
Operations Offices -State and Local Programs:			
Albuquerque	22	22	19
Chicago	53	54	45
Idaho	14	14	12
Richland	12	12	11
San Francisco	15	16	15
Savannah River	15	16	15
Subtotal, Operations Office	131	134	117
Total, Energy Conservation	339	352	288
Attrition Rate:	FY 1987 13%	FY 1988 13%	FY 1989 9%

VOLUME 5

EMERGENCY PREPAREDNESS

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS

PROPOSED APPROPRIATION LANGUAGE

Emergency Preparedness

For necessary expenses in carrying out emergency preparedness activities, [$6,641,000] $6,467,000. (Department of the Interior and Related Agencies Appropriations Act, 1990.)

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS

OVERVIEW

ENERGY EMERGENCIES

The Emergency Preparedness Program seeks to reduce the vulnerability of the Nation's energy systems to energy supply disruptions; and to develop an energy emergency response system that would enhance our ability to minimize domestic consequences should a disruption occur.

The U.S. is, of course, a world power with world wide interests and obligations. Consequently, it has a stake in world energy markets, which likely will remain vulnerable to energy supply disruptions throughout this decade and beyond. However, by securing U.S. energy resources against potential threats -- including disruptions in world oil supplies, acts of hostile governments, terrorism, sabotage and natural disasters -- the Nation can assure energy supplies for defense, vital domestic needs, and international obligations, while moderating adverse effects on the economy.

The Emergency Preparedness Program will continue to monitor domestic and international energy events, conduct activities to provide for effective use of the SPR as a key element of energy emergency preparedness and to conduct studies and training exercises to increase our emergency response policy capability. Within this framework, the Program will emphasize important energy security and national defense activities such as:

- drawing down and distributing the Strategic Petroleum Reserve (SPR);
- fulfilling commitments to the International Energy Agency (IEA), the North Atlantic Treat Organization (NATO) and other allies;
- assuring Congress, States, localities and the public of timely, accurate information, analyses and assessments about an energy emergency as it develops;
- coordinating Federal energy actions through the Federal Emergency Management Agency (FEMA), with States, localities and industry during an energy emergency;
- ensuring that the Nation has sufficient energy supplies to meet defense and other vital national needs during peacetime and mobilization periods;

- ensuring that U.S. energy emergency response options are based on the best possible assessment of the energy situation;

- ensuring response readiness through the development of contingency procedures, training and exercises to include participation in IEA, NATO and other civilian and military exercises; and

- ensuring the continued performance of the Department's essential functions in the event of war.

From the national perspective, the Emergency Preparedness Program will build on and complement efforts to integrate planning, research, and testing activities into the Department's national energy strategy to improve U.S. preparation for and response to energy emergencies. This strategy can be used in day-to-day operations, and more importantly, to improve the long-term energy emergency response capabilities of the U.S.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS
(dollars in thousands)

LEAD TABLE

Energy Emergencies

Activity	FY 1989	FY 1990 *1	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Program Direction..........	$5,303	$5,493	$5,493	$5,493	$ 0	0%
Emergency Planning Contracts................	501	483	483	399	- 84	- 17%
Emergency Operations Contracts................	350	575	575	575	0	0%
Total....................	$6,154	$6,551	$6,551	$6,467	$- 84	- 1%
Staffing (FTEs)..........	69	71	71	71		

*1 FY 1990 reflects final Gramm-Rudman-Hollings Sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS
(dollars in thousands)

SUMMARY OF CHANGES

Energy Emergencies

FY 1990 Appropriation	$ 6,551
FY 1991 Base	$ 6,551
Contracts	
Decrease in Emergency Planning contracts due to improvements in procedures due to lessons learned from tests and exercises	- 84
FY 1991 Congressional Budget Request	$ 6,467

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS
(dollars in thousands)

KEY ACTIVITY SUMMARY

ENERGY EMERGENCIES

I. Preface: Program Direction

The Energy Emergency Preparedness Program is directed toward the fulfillment of 5 major program areas that focus on Key Assessments, International, Mobilization, Management and Domestic activities.

- o Energy Emergency key assessments include studies, analyses and evaluations of systems and response options undertaken to ensure that Administration energy emergency preparedness policies and programs continue to meet the overall energy policy goal of providing secure, reasonably priced energy supplies in an environmentally sensitive way, during normal times or energy disruptions.
- o International energy emergency activities support U.S. energy security through involvement in international programs that foster cooperative responses to international energy disruptions or allied energy requirements. Also, because of it potential impact on the international oil market, this program includes development of SPR drawdown and distribution policies and procedures.
- o Energy emergency mobilization activities support energy emergency preparedness by contributing to defense national security emergency preparedness, in conjunction with the National Security Council, the Department of Defense, and the Federal Emergency Management Agency.
- o Emergency management activities provide organizational structure, procedures and crisis management support systems to respond to an energy emergency.
- o Domestic energy emergency activities contribute to energy emergency preparedness by assessing the vulnerability of domestic energy systems to man-made or natural disruptions, improving communications among all responsible groups (media, Congress, States and industry) in the event of an emergency affecting the Nation's energy supplies, and ensuring the continuity of essential Government functions in time of war.
- o Program Direction includes administrative overhead costs for rent, utilities and services, EIA data support, and funds for additional office equipment and travel for HQs and regional staff to participate in training sessions to meet increased Continuity of Government program needs.

II. A. Summary Table: Program Direction

Program Activity	FY 1989 Actual		FY 1990 Estimate		FY 1991 Request		% Change
Energy Emergency Key Assessments........	04 FTE	$ 240	04 FTE	$ 240	04 FTE	$ 240	0%
Energy Emergency International..........	12 FTE	719	13 FTE	779	13 FTE	779	0%
Energy Emergency Mobilization...........	08 FTE	480	08 FTE	480	08 FTE	480	0%
Energy Emergency Management.............	17 FTE	1018	16 FTE	958	16 FTE	958	0%
Energy Emergencies Domestic.............	30 FTE	1798	30 FTE	1938	30 FTE	1938	0%
Subtotal, Program Direction...........	71 FTE	$4255	71 FTE	$4395	71 FTE	$4395	0%
Administrative Overhead Costs..........		$ 948		$ 998		$ 998	0%
EIA Support............................		$ 100		$ 100		$ 100	0%
Total, Program Direction..............		$5303		$5493		$5493	0%

II. B. Major Laboratory and Facility Funding

None.

II. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Key Assessments	Exercise the emergency preparedness management function of the Department to include a comprehensive spectrum of activities such as information gathering, situation assessment, response option development, and implementation techniques. The use and/or creation of management systems and procedures to enhance the decisionmaking process will be emphasized along with the institutionalization of procedures and structure so that management participants are trained and procedures are workable.	Refine the Department's energy emergency preparedness management function to ensure continued readiness. Activities include exercises to enhance key participant's capabilities and refine operating procedures as well as periodic briefings on world events that have the potential of having a detrimental effect on U.S. energy supplies.	Maintain the Department's readiness for emergencies by continuing preparedness exercises for key personnel. Implement changes to operating procedures developed from lessons learned in prior exercises. Conduct periodic briefings for high-level DOE staff on incidents or situations that have a potential for affecting U.S. energy supplies (e.g., Arabian Gulf, Panama, major oil spills).

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Key Assessments (Cont'd)	Examine difference between Business As Usual and Emergency Minimum Operating Inventory requirements. Determine if refinery flexibility is adequate for defense and essential civilian energy requirements during mobilization. Examine vulnerability of energy production and distribution systems.	Assess the continued efficacy of the U.S. petroleum refining capability to ensure that temporary or long-term losses of crude oil and products can be adequately offset by alternate sources (e.g., through SPR). Continue to examine the vulnerability of U.S. energy distribution infrastructure to natural and other disruptions to determine measures that would enhance flexibility, reduce susceptibility to disruptions and enhance reliability.	Continue to examine the ability of the U.S. petroleum refining industry to temporary or long-term losses of imported crude oil and products. Responses may be through enhanced refinery operations, alternative sources of supply, and use of the SPR. Continue to examine the vulnerability of U.S. energy distribution infrastructure to natural and other disruptions to determine measures that enhance flexibility, reduce susceptibility to disruptions and enhance reliability.

III. Activity Descriptions: (New BA in in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Key Assessments (Cont'd)	Continue analysis and explore new issues arising from changes in Federal or State emergency response mechanisms. Continue to provide Congress with policy documents and develop in-house assessments of pending legislation.	Enhance continuing liaison activities with key elements of the U.S. energy industry to ensure effective cooperation and coordination in preparing for and responding to energy emergencies.	Expand liaison activities with key elements of U.S. and Canadian energy industries to enhance threat awareness and to ensure continuity of vulnerability mitigation activities. Formalize Automated Vulnerability Assessment software, and sponsor training in its use. Begin specific regional vulnerability assessments to determine whether federally sponsored initiatives may be needed to reduce unacceptable risks to national security, public health and safety.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Key Assessments (Cont'd)		Maintain extensive support to review, if needed, major SPR issues such as prequalification of bidders, restricted bidder universe, and Jones Act Waiver requirements. Initiate analysis of new issues such as the need for an IEA negotiation strategy and the implications of less than maximum drawdown.	Continue efforts to resolve long-standing major SPR issues such as prequalification of bidders, restricted bidder universe, regional petroleum reserves and Jones Act waiver requirements. Continue analysis of newer SPR policy issues such as the need for an IEA negotiation strategy and the implications of less than maximum drawdown.
	(4 FTEs, $240)	(4 FTEs, $240)	(4 FTEs, $240)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency International	Continue technical support and U.S. representation before the IEA and NATO: 1) develop plans and procedures with other IEA/NATO staff; 2) monitor other countries' energy emergency policies and plans; 3) recruit and train industry staff for participation in international emergency programs; 4) attend meetings of IEA/NATO committees; 5) prepare U.S. position papers for international meetings; 6) coordinate emergency planning with FEMA, DOD, DOS and other agencies; 7) recruit and train NWOO personnel; 8) participate in NATO exercise WINTEX/CIMEX-89 and IEA exercise AST-6.	Same as FY 1989 except for number 8) participate in IEA exercise on CERM and NATO training session.	Participate in the IEAs Seventh Allocation Systems Test (AST-7) including the training of National Emergency Supply Organization (NESO) and Reporting Company (RC) personnel and on oil supply data prior to the test and preparation of appraisal reports following the test. Participate in the IEAs Emergency Response Program Review by reviewing members' emergency programs and preparing follow-up questions. Conduct a study to determine the impact of converting military demand for petroleum products under the implementation of the single fuel concept. Host the NWOO-West operation during the NATO wide exercise WINTEX-CIMEX 91.
	(12 FTEs, $719)	(13 FTEs, $779)	(13 FTEs, $779)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Mobilization	Continue to support Presidentially directed tasks pursuant to NSDD-47, NSDD-134 and NSDD-188. Work with the Interagency Group on Energy Vulnerability and the Interagency Group on National Mobilization to promote national security emergency preparedness through comprehensive vulnerability and requirements analysis, emergency response policy development and thorough planning and program development.	Continue to support Congressional and Presidentially-directed tasks pursuant to NSDD-47, the Federal Plan for Response to Catastrophic Earthquake and Executive Orders 11490 and 10480. These requirements include the development and maintenance of emergency response teams at HQs and in the field and the conduct of consequence analyses and transition plans.	Continue to support NSD-10, NSDD-47, E.O. 10480, 12038, 12656, the Federal Plan for Response to a Catastrophic Earthquake or other Catastrophic Natural Disaster; and requirements of DOD for planning related to Graduated Mobilization Response. Coordinate emergency information and response actions with energy industries. Continue to maintain a monitoring capability of major industry developments. Continue to participate in interagency groups involved with major emergency preparedness and response. Develop and maintain a standby organization for the National Defense Executive Reserves. Develop supporting manuals, publications and an operating checklist. Develop and maintain emergency response teams.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Mobilization (Cont'd)	Continue participation and planning in mobilization related exercises and tests. Ensure readiness of new policies and programs through systematic development of testing and training programs, to include major interagency and international exercises and DOE simulations. Initiate analyses of key issues that result from tests, simulations and exercises.	Participate with other government agencies in domestic and international tests and exercises aimed at enhancing the governments capability to respond to mobilization requirements and requirements to maintain Continuity of Government. Develop and test training programs designed to strengthen this response capability and initiate assessments of pertinent key issues surfaced as a result of the tests and exercises.	Continue to participate in tests, major interagency and international exercises and DOE simulations. Such participation will enhance DOEs capability to respond to mobilization requirements to maintain Continuity of Government. Develop and test training program designed to strengthen this response capability, and initiate assessments of pertinent key issues surfaced as a result of the tests, exercises and simulations.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Mobilization (Cont'd)	Continue to refine DPA procedures based on lessons learned from tests and exercises and through the interagency group coordination process. Formally promulgate procedural updates; continue the outreach process to educate other agencies and industry on Administration DPA policies and DOE/industry roles in meeting defense energy requirements. Continue to refine program capabilities and Departmental management procedures.	Ensure that DPA procedures are responsive to the requirements of current conditions and reflect lessons learned from exercises as well as the concerns of other government agencies. Continue to develop the Department's program management capabilities to properly acquit its responsibilities under DPA.	Same as FY 1990.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Mobilization (Cont'd)	Recruit NDERs to bring strength to about 225. Continue to integrate NDERs into Federal Continuity of Government programs. Continue to expand NDER roles in energy programs in relation to the management of energy resources for essential needs during mobilization contingencies. Continue to develop operating procedures for specific NDER managed programs and conduct national and regional training to ensure readiness.	Recruit NDERs to bring strength to about 275. Complete development of NPC study and begin to implement the petroleum NDER program. Continue and expand program to integrate NDERs into Federal COG program. Begin to develop DOE orders on the use of NDERs in DOE programs for management of energy resources for essential needs in national security emergencies such as mobilization and war. Begin to develop DOE orders for a contingent pre-delegation of DPA authorities to NDER Regional managers during communication cut-off conditions. Develop advanced NDER training course.	Recruit NDERs while replacing turnover to bring strength to about 375. Expand program that integrates NDERs into Federal COG program to include petroleum. Complete development of DOE Orders on NDER program authority and delegation of authority in communication cut-off situations. Develop and implement special orientation and training program for petroleum NDERs. Develop multiple resource advanced training for NDERs. Continue regular NDER training program of two to three orientation courses and one advanced course.
	(8 FTEs, $480)	(8 FTEs, $480)	(8 FTEs, $480)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management	Make changes to EEMS structure and process as new programs and policies are developed or as a result of completed tests and exercises. Continue to ensure full integration of EEMS evaluation objectives into readiness assurance activities. Set up and operate a comprehensive training program on EEMS and energy emergency activities.	Refine EEMS operation procedures to enhance efficiency and to respond to changes in policies and programs. Expand and maintain active team membership and readiness through exercises and other training to ensure a continued high state of readiness.	Expand EEMS operating procedures to address a wider range of potential emergency scenarios and fuel types. Develop and expand active team membership including development of a standby organization of Federal and Executive Reserve resources in each area through training, simulations and exercises. Enhance and refine the analytical and decisionmaking process to ensure the selection of the best mix of response options. Continue to update and modify EEMS based on lessons learned from exercises and in response to program and policy changes.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)	Continue to address through analysis and appropriate program action, critical natural gas issues that arise in the course of exercises and interagency group activities.	Expand and refine DOEs natural gas emergency response capabilities and integrate these within the EEMS structure. Continue to assess changes in the U.S. natural gas industry to ensure emergency response procedures reflect such changes.	Review natural gas emergency authorities and revise where necessary to reflect changes in the marketing and distribution of natural gas. Develop plans and procedures for incorporating these provisions into EEMS. Improve coordination with FERC and natural gas industry through simulations and outreach efforts. Assess the capability of the natural gas industry to respond to increased stresses such as peak load growth and unexpected increases in demand. Sponsor and provide procedures to assure sustainable natural gas supplies for consumers whose activity is essential to national security. Establish a framework to maintain emergency response plans to promote industry-government coordination.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)			Develop an analysis of those institutional responsibilities which inhibit gas industry operations during emergencies.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)	Continue to enhance the DSS with emphasis on graphic presentations, remote access capability and specific expert and artificial intelligence systems. Develop field element decision support modules that derive basic data and are linked to HQs DSS. Continue to develop and operate an enhanced daily ESRS. Ensure integration of enhanced timesharing data systems with the ESRS and expand sources of data and provide for computer analysis and graphics production. Develop on-line energy data key reference system.	Continue to refine and expand the capabilities of the Automated Office and Information System by using the microcomputer resource in support of such activities as: 1) the development of a geographic information system; 2) monitoring and assessing day-to-day events which might develop into an energy related crisis; and 3) analytical support for office operations as well as for gaming and exercises.	Implement an office-wide Local Area Network for improved communications and sharing. Continue activities as described in FY 1990.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)	Continue to develop the Energy Emergency Strategic Framework. Make new presentations within government and to industry based on updated energy emergency preparedness program information and data.	Use the Energy Emergency Strategic Framework as a basis for presentations to senior DOE officials, other Federal, State and local agencies, and industry. Presentations will focus on the role of the Federal government in the development of various response options to energy emergencies.	Review the newly designed National Energy Strategy for implications for energy emergency preparedness. Adjust Strategic Framework. presentations to reflect updated policy strategy; examine preparedness activities with other Federal, State and local agencies, and industry to determine whether current activities are in accord with now strategy.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)	Employ the enhanced ESRS with other monitoring and assessment capabilities to ensure timely indication and warning of emergency conditions. Using the EEMS, develop an integrated capability to quickly follow-up detected incidents with thorough data collection, situation analyses and early decision recommendations. Ensure the energy emergency Alert Coordination Officer system is maintained in a state of readiness. Continue to improve risk analysis methods and emergency response operating procedures.	Continue the OEE energy monitoring program to ensure early warning of emergency situations. Refine filtering criteria for identifying significant incidents, update ACO system procedures, continue to explore additional data and information sources, and develop communication links with other Federal and State emergency reporting capabilities. Enhance the significant incident evaluation procedure for assessing the level of emergency and its impact on the energy supply. Develop and implement procedures and organization for analysis of emergency situations.	Continue the OEE energy monitoring program to ensure early warning of emergency situations. Implement criteria for identifying significant incidents, initiate communication links with other Federal and State emergency reporting capabilities, and use updated ACO system procedures. Continue to explore additional sources of data and information. Refine the significant incident evaluation procedure for assessing the level of the emergency and its impact on energy supplies. Implement and further refine procedures and organization for analysis of emergency situations. Enhance the critical event report format.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Management (Cont'd)		Implement a critical event report recommending the use of the EEMS process.	
	(17 FTEs, $1018)	(16 FTEs, $958)	(16 FTEs, $958)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Domestic	Continue to work with government agencies, energy suppliers and critical energy users on energy supply vulnerability to make energy systems more resilient to attacks and/or to mitigate the impacts of supply disruptions. Work with strategic electric power systems to assess vulnerabilities after improvements resulting from initiatives with the North American Electric Reliability Council (NERC). Through the interagency forum, determine critical end-user minimum essential energy requirements and emergency backup capabilities.	Same activities as described in FY 1989. In addition, initiate joint planning with State energy and Public Utility Commissions to ensure that local plans for emergency energy distribution reflect the energy needs of end-users whose continued operations is essential for national security. Intensify activities with the Canadian government to assure compatibility between physical security afforded critical energy facilities under Canada's Vital Points Programme, and the U.S. Key Asset Protection Program.	Same activities as described in FY 1990. In addition, begin formal program of regional vulnerability assessments.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Domestic (Cont'd)	Determine vulnerability reduction measures needed by strategic energy systems for national security purposes that are beyond industry capabilities to provide. Continue outreach activities with industry to obtain owner/operator assessments of system vulnerabilities and mitigation measures and commitments to specific improvements.	Validate methodology for regional program of energy vulnerability assessments based on residual risks to end-users, national security.	
	(9 FTEs, $539)	(9 FTEs, $539)	(9 FTEs, $539)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Domestic (Cont'd)	Continue to develop state liaison program through close working relationship with DOE/State steering committee; promote and participate in regional Federal/State energy emergency seminars. Continue to improve DOE capabilities to support combined Federal/State energy emergency programs including the establishment of reliable and responsive communications and information links. Continue to integrate State involvement in DOE readiness assurance activities for energy emergencies, such as participation in training programs and emergency tests and exercises.	Continue to develop state liaison program through close working relationship with DOE/State steering committee and participation in regional Federal/State energy emergency seminars. Continue to improve DOE support of combined Federal/State energy emergency programs including the establishment of reliable and responsive communications and information links. Continue to integrate state involvement in DOE readiness assurance activities for energy emergencies, such as participation in training programs and emergency tests and exercises.	Continue to further develop state liaison program through close working relationship with the DOE/State steering committee through development of and participation in new regional Federal/State energy emergency seminars. Continue to improve DOE support of combined Federal/State energy emergency programs including the establishment of reliable and responsive communications and information links. Continue to develop opportunities for state involvement in DOE readiness assurance activities for energy emergencies, such as participation in training programs, emergency tests and exercises.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Domestic (Cont'd)	Continue to expand analytical processes and systems support capabilities for inclusion of States in DOE vulnerability assessment and mitigation efforts as well as DOE energy situation monitoring and assessment systems.	Continue to expand analytical processes and systems support capabilities for inclusion of states in DOE vulnerability assessment and mitigation efforts as well as energy situation monitoring and assessment systems. Develop closer working relationship between states and NDERs.	Same as activities as described in FY 1990.
	(7 FTEs, $420)	(7 FTEs, $420)	(7 FTEs, $420)
	Continue to develop DOE HQs and field COG structure and procedures. Working through appropriate groups, develop standby policies and programs to be implemented during COG emergencies.	Expand and integrate DOE HQs and field COG structure with participants from DOE operations offices, DOE national labs, state, local and private industry organizations. Develop standby policies, programs and procedures to respond to COG national security emergencies.	Same activities as described in FY 1990.

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Energy Emergency Domestic (Cont'd)	Continue to support interagency efforts to develop comprehensive national security emergency plans for COG emergencies. Continue to develop DOE COG HQs and regional teams through training and exercises. Continue to expand COG program readiness through energy infrastructure preparedness planning and capability development. Continue the development of requisite management support capabilities for the COG program.	Support increased COG program specialized equipment requirements (secure telephones, personal computers, copy machine and audio-visual equipment) for management briefings, training and development, and computer resource information/applications.	Same activities as described in FY 1990.
		Support increased travel requirements for COG program including attendance at FEMA Federal Regional Centers and FEMA Special Facility by regional team members, operations office and lab staff, NDERs and HQs staff for regional training, meetings and exercises.	Same activities as described in FY 1990.
	(14 FTEs, $839)	(14 FTEs, $979)	(14 FTEs, $979)
	(30 FTEs, $1798)	(30 FTEs, $1938)	(30 FTEs, $1938)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction			
Administrative Overhead Costs	Administration overhead for supplies, materials, utilities and services provided centrally by M&A.	Provides for services described in FY 1989.	Provides for services described in FY 1989.
	($948)	($998)	($998)
EIA Support	Estimated usage of EIA ADP support for energy emergency preparedness analytic capabilities.	Provides for services described in FY 1989.	Provides for services described in FY 1989.
	($100)	($100)	($100)
TOTAL PROGRAM DIRECTION:	$5303	$5493	$5493
TOTAL FTEs:	71	71	71

KEY ACTIVITY SUMMARY

ENERGY EMERGENCIES

I. Preface: Emergency Planning Contracts

Provides contract support to the Emergency Preparedness program in accordance with policies to maintain energy stability, security and strength; to reduce the Nation's vulnerability to energy supply disruptions; and to enhance our ability to respond should a disruption occur. Under Emergency Planning, support services will be used to fulfill objectives of energy emergency response policy analysis and planning, promote international energy security, and serve to secure energy supplies to meet defense and other vital national needs during peacetime and mobilization periods.

II. A. Summary Table: Emergency Planning Contracts

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Emergency Planning Contracts	$ 501	$ 483	$ 399	- 12%

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Emergency Planning Contracts			
Analysis	Conduct analysis of domestic energy security issues (vulnerability of U.S. energy systems, facilities, networks) as defined by the NSC Energy Vulnerability Interagency Group. Additional analytical tasks will be performed to fulfill energy requirements of Special Compartmented emergency preparedness programs.	Continue analysis of domestic energy security issues (vulnerability of U.S. energy systems, facilities, networks) as defined by the NSC. Continue analytical tasks to fulfill energy requirements of Special Compartmented emergency preparedness programs.	Under the aegis of the Policy Coordinating Committee, examine the vulnerability of vital energy systems to disruptions, and develop initiatives both to decrease this vulnerability and to mitigate the impact on national security of any disruptions; address the anticipated capacity or inadequacy of these systems to meet national security needs.
	($200)	($200)	($200)

III. **Activity Descriptions:** (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Emergency Planning Contracts (Cont'd)			
Tests and Exercises	Support for preparation, conduct and assessment of increased test and exercise schedule, e.g., WINTEX/CIMEX-89, AST-6, GLOBEX and REX-88 BRAVO. Particular emphasis to be placed on planning and evaluation tasks and to incorporate lessons learned into general energy emergency operating procedures. Continue support to improve data analysis and energy situation assessment methods and IEA/NATO energy security analysis.	Support for preparation, conduct and assessment of test and exercise schedule; incorporate lessons learned from test results into operating procedures. Continue to refine energy situation assessment and data analysis methods. Continue to conduct IEA/NATO energy security analysis.	Same activities as described in FY 1990.
	($301)	($283)	($199)

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
EMERGENCY PREPAREDNESS
(dollars in thousands)

KEY ACTIVITY SUMMARY

ENERGY EMERGENCIES

I. Preface: Emergency Operations Contracts

Under Emergency Operations, support services will be used to promote activities associated with the Department's essential functions in the event of war (including development of Continuity of Government national security emergency plans and testing of procedures) and U.S. energy resources against potential threats including terrorism, sabotage, natural disasters and acts of hostile government; and funding for information systems, software and hardware, and commercial timesharing services.

II. A. Summary Table: Emergency Operations Contracts

Program Activity	FY 1989 Acutal	FY 1990 Estimate	FY 1991 Request	% Change
Emergency Operations Contracts..............................	$ 350	$ 575	$ 575	- 0%

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Emergency Operations Contracts			
National Security	Provides EIA support, e.g., maintenance and technical services for computer equipment; special programming for national security projects (COG, domestic energy security activities); data services for modeling, impact analysis of classified scenarios or emerging threat conditions.	Same services as described in FY 1989.	Same services as described in FY 1989.
	($140)	($100)	($100)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Emergency Operations Contracts (Cont'd)			
Energy Information Systems	Continues database contractor support including computer timesharing, software and hardware upgrades; support for Automated Office and Information Systems (AOIS) requirements; support for data analysis for FEMA Special Compartmented Programs.	Same services as described in FY 1989.	Continues contractor support for AOIS including computer timesharing, hardware and software acquisition, a refinery process model, and access to current information sources.
	($135)	($135)	($135)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Emergency Operations Contracts (Cont'd)			
Communications	Provides funds for maintaining electronic mail service to support information exchange with Operations Offices, States, key elements in industry, e.g., DOE National Defense Executive Reservists in energy emergencies, and in conduct of unclassified exercises.	Same services as described in FY 1989.	Same services as described in FY 1989.
	($75)	($80)	($80)

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY1989	FY 1990	FY 1991
Emergency Operations Contracts (Cont'd)			
Continuity of Government		Provides contract support for increased requirements for Continuity of Government program including development of standard operating procedures; design and conduct of table top exercises; data acquisition and software development; and support for Operations Offices and laboratory staff.	Same services as described in FY 1990 with particular emphasis on continued development of regional COG capabilities.
		($260)	($260)

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
DEPARTMENTAL ADMINISTRATION
(obligations dollars in thousands)

OBJECT CLASS SUMMARY

Energy Emergency

Direct Funding:	FY 1989	FY 1990	FY 1991
11.1 Full-time Permanent..............	$3,250	$3,400	$3,400
11.3 Other than full-time permanent.......................	290	200	200
11.5 Other compensation...............	38	40	40
11.9 Total personnel compensation...................	$3,578	$3,640	$3,640
12.1 Personnel Benefits: Civilian.......................	$ 438	$ 415	$ 450
21.0 Travel..........................	200	265	265
22.0 Transportation of things..........................	5	12	9
23.0 Rental Payments..................	743	699	761
24.0 Printing and Reproduction........	30	85	72
25.0 Other Services...................	$1,080	$1,253	$1,169
26.0 Supplies and Materials...........	80	107	101
31.0 Equipment........................	0	75	0
99.0 Subtotal.........................	$6,154	$6,551	$6,467
Total Obligations................	$6,154	$6,551	$6,467

VOLUME 5

ECONOMIC REGULATION

DEPARTMENT OF ENERGY

FISCAL YEAR 1991 CONGRESSIONAL BUDGET REQUEST

ECONOMIC REGULATION

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION

PROPOSED APPROPRIATION LANGUAGE

Economic Regulation

For necessary expenses in carrying out the activities of the Economic Regulatory Administration and the Office of Hearings and Appeals, [$18,300,000] $16,408,000. (Department of the Interior and Related Agencies Appropriations Act, 1990.)

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION

OVERVIEW

Economic Regulatory Administration

The goal of the Economic Regulatory Administration (ERA) is to continue the resolution of cases involving alleged pricing violations of the Emergency Petroleum Allocation Act of 1973 (EPAA) while winding down the enforcement program in a responsible manner. The ERA and its predecessor organizations have audited approximately 100,000 petroleum firms and collected nearly $7 billion in oil overcharge recoveries, with another $1 billion due from settlement agreements in which monies have not yet been received. Of the funds received, $1.4 billion has been distributed to identifiable injured parties and $1.3 billion has been paid to the United States Treasury. Another $3.9 billion has been paid to the States and territories to be used for energy related programs, such as Weatherization, low-income fuel assistance and other energy programs designed to benefit the States' population. ERA currently has about 140 cases remaining unresolved.

Since January, 1981, when President Reagan abolished price controls on refined petroleum products, ERA's Compliance program has declined from nearly 2,000 employees in 135 offices to 125 employees in headquarters and one field office. ERA's objective is to litigate the remaining cases as expeditiously as possible while encouraging reasonable settlement negotiations. Within the next two years, ERA would like to have the number of cases reduced to a level such that the remaining program could reasonably be transferred to another organization within the Department.

In February, 1989, the Office of Fuels Programs (the Natural Gas and Electricity and the Fuels Conversion activities) was transferred from ERA to the Office of Fossil Energy.

Compliance

In FY 1991, ERA will continue to pursue the successful completion of those cases remaining from the EPAA pricing and allocation regulations. By the beginning of FY 1991, it is estimated that there will be 100-110 cases in pending litigation, including approximately 45 claims in bankruptcy proceedings. The Compliance goals in FY 1991 are to vigorously prosecute all overcharge violations through administrative or judicial tribunals and, when consistent with the public interest, resolve cases by negotiated settlements.

To meet its goals in FY 1991, the Compliance program will require funding to support 99 FTE's and $1.2 million in contract money for litigation support services. This level of funding will enable ERA to employ a small staff of experienced attorneys and highly specialized support personnel while maintaining the flexibility to meet the demands of periodic, highly intensive, complex litigation needs. As ERA works to resolve much of its remaining case load, it will continue to face talented and skilled litigation opponents used by the petroleum industry in contesting the government's cases. The Compliance program should be funded at a level sufficient to maintain a corps of highly competent and experienced professionals in order to properly represent the interests of the Department on behalf of the public.

Program Administration

This activity provides management and administrative support to ERA's Compliance program, including personnel, travel, budget, and other support. In FY 1991, the Program Administration staff will process and maintain personnel and expenditure reports; allocate and monitor all aspects of budget execution; coordinate regional personnel and funding actions; control and respond to Congressional and public correspondence; process Freedom of Information Act requests; and maintain the Oil Pricing Recordkeeping Requirements Program.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

LEAD TABLE

Economic Regulatory Administration

Program	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollars	Percent
Compliance	$12,511	$11,674	$11,674	$10,316	(1,358)	-11.6%
Program Administration	629 (c)	659 (c)	659 (c)	676	17	2.6%
Fuels Conversion	(a)					
Natural Gas & Electricity	(b)					
Total Operating Expenses	$13,140 (d)	$12,333 (e)	$12,333 (e)	$10,992	(1,341)	-10.9%
Staffing (FTE's)	138	117 (f)	117 (f)	107		

(a) Activity transferred to Fossil Energy in 1/89; amount for FY 1989 is $356.
(b) Activity transferred to Fossil Energy in 1/89; amount for FY 1989 is $2,265.
(c) Figures are for comparability purposes; actual appropriations for FY 1989 and FY 1990 are $712 and $761, respectively.
(d) Figure is for comparability purposes; actual appropriation for FY 1989 is $15,844.
(e) Figure is for comparability purposes; actual appropriation for FY 1990 is $12,435 and reflects the final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.
(f) FY 1990 appropriation provided funding for 129 FTE's.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

SUMMARY OF CHANGES

Economic Regulatory Administration

FY 1990 Appropriation/FY 1991 Base	$12,333 (a)
Program Increases and Decreases:	
Compliance	
0 Reductions associated with decrease in FTE's due to diminishing case load	(1,018)
0 Reduction in contract support services	(200)
0 Decreased travel costs	(25)
0 Reduction in costs for computer services	(115)
Program Administration	
0 Increased personnel costs	33
0 Reduction in overhead costs	(16)
FY 1991 Congressional Budget Request	$10,992

(a) Includes a downward comparability adjustment of $102.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

Compliance

I. Preface:

The Compliance program administers the enforcement activities resulting from a wide spectrum of oil pricing and allocation regulations that governed the petroleum industry throughout most of the 1970's. Foremost among these was the Emergency Petroleum Allocation Act of 1973 (EPAA) which was in effect from October 1973 through January 1981. ERA, together with its predecessor organizations, has audited over 100,000 petroleum firms and collected nearly $7 billion in oil overcharge recoveries. Only about 140 cases currently remain unresolved. The program now consists of litigating and negotiating settlements of cases previously developed, providing litigation assistance to the Department of Justice on EPAA-related cases in which the DOJ has retained primary litigation authority, and monitoring and collecting overcharge monies pursuant to final administrative and judicial orders.

II. Summary Table:

Activity	FY 1989	FY 1990	FY 1991	Change
Litigation	$12,085	$11,294	$ 9,993	-11.5%
Post-Litigation	426	380	323	-15.0%
Totals	$12,511	$11,674	$10,316	-11.6%

III. Activity Descriptions:

FY 1989	FY 1990	FY 1991
Litigation		
Conducted administrative and judicial litigation in 228 cases. Negotiated settlements in 49 cases, and 36 other cases resolved by final legal action. $1.6M for litigation support services contract. (122 FTEs, $12.1M).	Conduct administrative and judicial litigation in approx. 150 cases. Negotiate settlements in as many cases as possible, estimated at 25-40 cases. $1.4M for contract support. (103 FTEs, $11.3M). a/	Conduct administrative and judicial litigation in approx. 100-110 cases. Negotiate settlements in as many cases as possible, estimated at 25-40 cases. $1.2M for contract support. (95 FTEs, $10.0M).
Post-Litigation		
Pursued collection and monitored compliance of 283 final orders, and took enforcement action as appropriate. (6 FTEs, $0.4M).	Pursue collection and monitor compliance of approximately 215 final orders, and take enforcement action as appropriate. (5 FTEs, $0.4M). a/	Pursue collection and monitor compliance of approximatley 175 final orders, and take enforcement action as appropriate. (4 FTEs, $0.3M). b/

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a/ FY 1990 appropriation provided funding for a total of 120 FTE's for the Compliance program.
b/ The Department is planning to transfer this activity to the Office of the Controller before FY 1991.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

Program Administration

I. Preface:

This activity assures proper administration and management of ERA's Compliance program and provides personnel, travel, budget, accounting, training, and other administrative support.

II. Summary Table:

Activity	FY 1989	FY 1990	FY 1991	Change
Administration	$ 629	$ 659	$ 676	+ 2.6%

III. Activity Description:

FY 1989	FY 1990	FY 1991
Provided managerial and administrative support for remaining ERA programs. (10 FTEs, $0.6M).	Provide managerial and administrative support for remaining ERA programs. (9 FTEs, $0.7M)	Provide managerial and administrative support for remaining ERA programs. (8 FTEs, $0.7M).

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

OBJECT CLASS

Compliance

		FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request
Direct Funding:				
11.1	Full-time permanent	$6,622	$6,108	$5,363
11.5	Other personnel compensation	120	110	100
11.9	Total personnel compensation	6,742	6,218	5,463
12.1	Personnel benefits	742	684	602
13.0	Benefits for former employees	250	500	500
21.1	Travel & transportation of persons	200	200	175
22.0	Transportation of things	7	21	20
23.0	Communications, utilities, & rent	2,146	1,719	1,443
24.0	Printing & reproduction	173	184	189
25.0	Other services	2,141	1,978	1,775
26.0	Supplies & materials	110	170	149
99.0	Total direct funding	$12,511	$11,674	$10,316

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

OBJECT CLASS

Program Administration

		FY 1989 Actual	FY 1990 Appropriated	FY 1991 Request
Direct Funding:				
11.1	Full-time permanent	$369	$393	$422
11.5	Other personnel compensation	8	8	8
		-----	-----	-----
11.9	Total personnel compensation	377	401	430
12.1	Personnel benefits	41	44	48
21.1	Travel & transportation of persons	15	15	15
22.0	Transportation of things	1	2	2
23.0	Communications, utilities & rent	135	121	103
24.0	Printing & reproduction	14	18	18
25.0	Other services	39	42	46
26.0	Supplies & materials	7	16	14
		-----	-----	-----
99.0	Total direct funding	$629 (a)	$659 (a)	$676

(a) Figures are for comparability purposes; actual appropriations for FY 1989 and FY 1990 are $712 and $761, respectively.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

APPROPRIATIONS/FTE'S/ACCOMPLISHMENTS

Economic Regulatory Administration

Compliance	FY 1989	FY 1990	FY 1991
o Appropriation	$12,511	$11,674	$10,316
o Full-time Equivalents	128	108 (a)	99
o Major Refiner PRO's Issued	1	0	0
o Other PRO's Issued	3	1	0
o Negotiated Settlements (Cases)	49	25-40	25-40
o Administrative Litigation (Cases at start of FY)	93	60	30-35
o Judicial Litigation (Cases at start of FY)	111	81	70-75
o Monitor Remedial and Consent Orders	283	215	175 (b)
Program Administration			
o Appropriation	$712	$761	$676
o Full-time Equivalents	10	9	8
Total Appropriation	$13,223	$12,435	$10,992
Total Full-time Equivalents	138	117 (a)	107

(a) Compliance's FY 1990 appropriation provided funding for 120 FTE's, making a total of 129 FTE's for ERA.
(b) The Department is planning to transfer this function to the Office of the Controller before FY 1991.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION

OVERVIEW

Office of Hearings and Appeals

The Office constitutes the principal adjudicative office of the Department. OHA is responsible for:

- Resolving applications for refund from oil overcharge funds paid to the Department in settlement of actual or alleged violations of prior mandatory petroleum allocation and pricing regulations.
- Adjudicating the remaining enforcement cases related to the prior petroleum regulations.
- Issuing final agency decisions concerning Freedom of Information Act and Privacy Act appeals.
- Ruling on requests for exceptions relief from other rules or generally applicable actions of the Department.
- Generally conducting the proceedings and issuing final agency decisions on administrative appeals of orders issued by program offices.

The priorities of OHA in FY 1991 are to administer and process the large number of petroleum overcharge refund proceedings and to substantially close out remaining compliance matters. Attainment of these goals would terminate matters pertaining to the prior petroleum regulatory programs.

However, attainment of these goals will be difficult without sufficient funding to allow the Office a staffing level of at least 74 FTEs through FY 1991. In FY 1991, OHA will continue to process the extraordinarily large number of refund applications already received and still expected during FY 1988 through FY 1990 -- approximately 125,000 -- as well as the 11,000 to 22,000 additional applications expected to be received in FY 1991. As of January 1, 1990, OHA had reduced its refund application inventory to 23,949 applications. Because case closure at this high rate included many "batch" processing techniques whose usefulness will soon be exhausted, the exceptionally high current rate of case closure per FTE in all likelihood cannot continue. In this regard, the refund applications remaining on hand at the beginning of FY 1991 will require increasingly detailed analysis.

In addition to this refund workload, OHA anticipates continuing to receive approximately 175 Freedom of Information Act and other non-compliance cases in both FY 1990 and FY 1991. Finally, in FY 1991 OHA expects to complete virtually all of its remaining inventory of 68 compliance and related cases.

The FY 1991 budget request is $5,416,000. This represents a decrease of 7.7 percent from the appropriated funding level for FY 1990, and provides for salaries and support for 74 FTEs. This level of staffing reflects a reduction of 15 FTEs, or 17 percent, from FY 1990 levels.

The Departmental Budget Request represents a very measured and moderate response to OHA's large refund application workload and its other continuing casework. Funding at the Departmental Request level for FY 1991, therefore, will enable OHA to meet minimally acceptable processing times for its distribution of refund monies, adequately process its ongoing non-compliance caseload, and complete virtually all of its remaining compliance-related workload.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

LEAD TABLE

Office of Hearings and Appeals

					Program Change Request vs Base	
Activity	FY 1989 Actual	FY 1990 Appropriated	FY 1991 Base	FY 1991 Request	Dollar	Percent
Operating Expenses	$5,528	$5,865	$5,973	$5,416	$-557	-9.3%
Staffing (FTEs)	87	89	89	74		

Authorizations: Section 503, 504(a), P.L. 95-91; Section 21, P.L. 93-275; Section 104, P.L. 94-385; Section 5, P.L. 93-159; Section 207, P.L. 92-210; P.L. 89-554, P.L. 93-579.

Note: FY 1990 reflects final Graham-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

SUMMARY OF CHANGES

Office of Hearings and Appeals

FY 1990 Appropriation	$5,865
Adjustments- FY 1990 Pay Increase	+ 108
FY 1991 Base	5,973
Decrease of 15 FTEs	- 557
FY 1991 Congressional Budget Request	$5,416

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

Office of Hearings and Appeals

Program Activity/ Subactivity	FY 1989	FY 1990	FY 1991
CASE RESOLUTION:			
Compliance and related filings	During FY 1989 OHA received 31 new compliance and related cases, and resolved 64 cases. Inventory was reduced by 33 percent.	As of October 1, 1989, OHA had 68 compliance and related cases in inventory. OHA expects to resolve 53 cases during FY 1989, leaving an inventory of approximately 15 cases at fiscal year end.	At this level of funding, OHA projects that it will resolve virtually all remaining compliance and related cases by fiscal year end.
Non-compliance filings	During FY 1989 OHA received 155 new non-compliance cases, and resolved 151 cases.	As of October 1, 1989, OHA had 88 non-compliance cases in inventory. In FY 1990 OHA expects to receive 175 new non-compliance cases and to resolve 185 cases. This will leave an inventory of approximately 78 cases at fiscal year end. Most of the inventory will consist of classified Freedom of Information Act cases under review by DP.	In FY 1991 OHA expects to receive approximately 175 new non-compliance cases. At this level of funding, OHA projects that it will resolve 180 cases, leaving an inventory of approximately 73 cases at fiscal year end.

Program Activity/ Subactivity	FY 1989	FY 1990	FY 1991
CASE RESOLUTION:			
Refund Applications	During FY 1989 OHA received 18,881 oil overcharge refund applications. Using batch-processing applicable to a portion of OHA's refund application inventory, OHA processed 59,200 applications, resulting in refunds of over $152 million to injured parties.	As of October 1, 1989, OHA had received a grand total of 158,036 refund applications and had an inventory of 25,674 applications. In FY 1990 OHA expects to receive 11,000 to 22,000 new applications. The new and remaining applications cannot be batch-processed to the degree previously achieved. Therefore, OHA expects to process approximately 20,000 applications. This will leave an inventory of approximately 17,000 to 28,000 applications at fiscal year end.	In FY 1991 OHA expects to receive approximately 11,000 to 22,000 new refund applications. OHA will continue to process refund applications as expeditiously as possible. However, it may not be possible to maintain the anticipated FY 1990 level of completion at this level of funding.
TOTAL	$5,528	$5,865	$5,416
Staffing FTEs	87	89	74

Note: Each OHA staff member works on matters relating to more than one of the above subactivities. There is no way to estimate accurately, therefore, the amount of staff hours (and corresponding portions of OHA's budget) actually spent on each of OHA's various functions. Accordingly, it is not possible to calculate the estimated cost for each of the above activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ECONOMIC REGULATION
(obligations dollars in thousands)

OBJECT CLASS SUMMARY

Office of Hearings and Appeals

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request
Direct Funding:			
11.1 Full-Time permanent	2,250	2,342	2,459
11.3 Other than full-time	734	763	340
11.5 Other Compensation	40	41	43
11.9 Total personnel compensation	3,024	3,146	2,842
12.1 Benefits	485	505	530
21.0 Travel	29	31	29
22.0 Transportation of things	12	13	12
23.2 Rental payments to others	930	968	894
24.0 Printing and reproduction	561	584	539
25.0 Other Services	373	500	461
26.0 Supplies and materials	114	118	109
Total	5,528	5,865	5,416

VOLUME 5

ENERGY INFORMATION ADMINISTRATION

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION

PROPOSED APPROPRIATION LANGUAGE

For necessary expenses in carrying out the activities of the Energy Information Administration, [$65,232,000] $66,608,000, of which $1,000,000 for computer operations shall remain available until September [1991] 1992 and [$2,000,000] $1,700,000 for end-use energy consumption surveys shall remain available until expended.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION

OVERVIEW

ENERGY INFORMATION

The Energy Information Administration (EIA) is the Nation's primary source of comprehensive energy information. EIA provides relevant and timely energy statistics and analysis reports to the Executive Branch, Congress, State governments, industry, and the public so that necessary energy information is available to decisionmakers. EIA also provides, on a reimbursable basis, energy data, analyses, and data processing support to the Federal Energy Regulatory Commission and to other Department of Energy (DOE) offices.

In accordance with its legislative mandate, EIA collects, evaluates, assembles, analyzes, and disseminates energy information. Focal points for data collection and analysis are energy reserves, production, consumption, distribution, technology, related economic information, and resource adequacy to meet the Nation's demands in the near- and longer-term future.

In FY 1991, EIA will continue to place primary emphasis on the maintenance of the national energy information program. EIA products are a recognized and integral component of the Federal statistics program. EIA data are used by the Bureau of Economic Analysis for the Gross National Product accounts and for the National Input and Output accounts, by the Bureau of the Census for reporting on expenditures for nonresidential improvements, by the Bureau of Labor Statistics for the Producer Price Index and the Consumer Price Index, and by the Environmental Protection Agency for the development of air quality standards and analysis of motor gasoline lead phasedown. EIA is recognized as the sole source of comprehensive data on U.S. oil, gas, and uranium reserves and U.S. oil, gas, uranium, and coal production, distribution, and consumption. The International Energy Agency, the Organization for Economic Cooperation and Development, and the Nuclear Energy Agency rely on EIA information and analyses as the official statistics to describe the U.S. energy situation in international forums and publications. EIA data and analyses support DOE's emergency preparedness activities. EIA is also a major source of energy information for the media, such as Forbes, Business Week, New York Times, Reuters News Services, and the radio and television networks.

The FY 1991 congressional budget request of $66.6 million for EIA provides for a small decrease in funding from the FY 1990 adjusted level after inflation. There is a small program increase of $75,000 for environmental analysis, several program decreases totaling $681,000, and a net funding decrease of $520,000 associated with the normal cycle for conducting four triennial consumption surveys. These decreases will be necessary to restore funding to activities reduced as a result of FY 1990 sequestration and to fund the FY 1991 impact of the FY 1990 pay raise.

The request contains a net decrease for the triennial consumption surveys because the Manufacturing Energy Consumption Survey (MECS), the Residential Transportation Energy Consumption Survey (RTECS), and the sampling frame update for the Commercial Buildings Energy Consumption Survey (CBECS) planned for FY 1991 are less costly to implement than the Residential Energy Consumption Survey (RECS) conducted in FY 1990.

The request also includes several program decreases including the completion of a project to automate the international energy questionnaire, a reduction in contract support for development of the international demand model, simplification of administrative management information systems, reduced funding for administrative support provided by the Department, and elimination of the *Nuclear Power Construction Activity* publication due to a phase down in these activities.

The Department of Energy is developing a National Energy Strategy (NES) to aid in planning a secure energy future for the Nation, while safeguarding the environment and sustaining economic growth. EIA has been asked to develop a National Energy Modeling System (NEMS), building on its existing inventory of models, to support the analysis that will be required in producing the NES. In FY 1990 and 1991, a significant portion of EIA's modeling and analysis agenda will be directed toward the NES. The FY 1991 congressional budget request does not include incremental funding for this effort. However, EIA has initiated realignment of some resources to support the NES. These realignments primarily involve data development, analysis, and modeling in the areas of renewable energy and end-use energy demand. They do not involve any major new data collection efforts, nor do they provide for extending EIA models to forecast beyond the year 2010.

The long-range plan for EIA over the FY 1992 through FY 1995 period, as reflected in the FY 1991 congressional budget request, will be to maintain the National Energy Information System (NEIS) to ensure continued availability of relevant data and analyses in compliance with sound statistical practices. Routine quality maintenance to prevent product deterioration will be included in ongoing program operating costs. EIA's end-use consumption surveys will continue on a triennial cycle. The next Commercial Buildings Energy Consumption Survey is planned for FY 1992, the next Residential Energy Consumption Survey is scheduled for FY 1993, and the next Manufacturing Energy Consumption Survey and Residential Transportation Energy Consumption Survey are scheduled for FY 1994.

Two significant investments beyond an inflation adjusted baseline will be required during the FY 1992-1995 period for EIA to maintain the NEIS at its current operating level. First, beginning in FY 1992, EIA's next long-term replacement of computer systems equipment is planned with a graduated payment schedule of approximately $900,000 per year for 2 years and $500,000 per year for 2 additional years in addition to routine out-year requirements. The out-year projections for this purpose are reduced from last year's estimates because EIA is considering purchasing used computer replacement hardware which is expected to be available at substantially lower prices than a completely new computer replacement. Second, depending on the availability of 1990 decennial census information, it would be appropriate for EIA to construct new sampling frames for the surveys of energy consumption in residential and commercial buildings using 1990 population and housing data from the Bureau of the Census. Because all demographic surveys conducted by the Federal Government are based on population and demographic characteristics collected in the decennial census, the frame redesigns for these surveys are being coordinated by an OMB task force. Total funding above EIA's base funding level in FY 1992 for the consumption survey frames design and update is estimated to total about $3.5 million.

The outyear projections do not include significant changes in the amount of funds allocated to EIA's ongoing information programs, although directional changes may be appropriate as a result of the development and implementation of the National Energy Strategy. In general, resources will be realigned to the extent possible to meet changing requirements.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

SUMMARY OF ESTIMATES BY APPROPRIATION BY MAJOR ACTIVITY

Activity	FY 1989 Actual	FY 1990 Adjusted Appropriation	FY 1991 Request
National Energy Information System (NEIS)	$52,798	$54,505	$56,727
Policy and Management (P&M)	10,058	9,814	9,881
Total, Energy Information Administration	$62,856	$64,319	$66,608
Staffing:			
NEIS FTE's:			
Direct	417	421	421
FERC Funded	15	14	14
Nuclear Waste Funded	3	2	2
P & M FTE's:			
Direct	30	31	31
Total FTE's, Energy Information Administration	465	468	468

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

LEAD TABLE

National Energy Information System (NEIS)

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base Dollar	Program Change Request vs Base Percent
Oil and Gas Operating Expenses	$ 13,186	$ 13,385	$ 13,385	$ 14,134	$ +749	+6%
Coal, Nuclear, Electric and Alternate Fuels Operating Expenses	$ 4,916	$ 5,216	$ 5,216	$ 5,531	$ +315	+6%
Energy Markets and End Use Operating Expenses	$ 5,238	$ 5,220	$ 5,220	$ 4,835	$ -385	-7%
ADP Services Operating Expenses	$ 6,653	$ 7,023	$ 7,023	$ 7,383	$ +360	+5%
Information Services Operating Expenses	$ 490	$ 699	$ 699	$ 748	$ +49	+7%
Statistical Standards Operating Expenses	$ 1,130	$ 1,185	$ 1,185	$ 1,262	$ +77	+6%
Program Direction Operating Expenses	$ 21,085	$ 21,777	$ 21,777	$ 22,834	$ +1,057	+5%
TOTAL	$ 52,798	$ 54,505	$ 54,505	$ 56,727	$ +2,222	+4%
Summary Operating Expenses	$ 52,798	$ 54,505	$ 54,505	$ 56,727	$ +2,222	+4%
Total Program	$ 52,798	$ 54,505	$ 54,505	$ 56,727	$ +2,222	+4%
Staffing (FTE's)	432	435	435	435		

FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

SUMMARY OF CHANGE

NATIONAL ENERGY INFORMATION SYSTEM

FY 1990 Adjusted Appropriation	$54,505
FY 1991 Base	$54,505
Restoration of FY 1990 Sequestration	+ 776
Inflation of Contractual Activities and Travel	+ 1,113
Salary and Benefit Pricing Adjustments	+ 1,050
FY 1991 Base Adjusted for Inflation	$57,444
Program Increases:	
Conduct FY 1991 Manufacturing Energy Consumption Survey	+ 950
Conduct FY 1991 Residential Transportation Energy Consumption Survey.	+ 300
Initiate Commercial Buildings Energy Consumption Survey Frame Update.	+ 273
Exploration of Environmental Concerns	+ 75
Program Decreases:	
FY 1990 Residential Energy Consumption Survey	- 2043
Automation of International Energy Questionnaire	- 150
International Demand Modeling	- 102
Publication of Nuclear Power Construction Activity	- 20
FY 1991 Congressional Request	$56,727

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

NATIONAL ENERGY INFORMATION SYSTEM

I. Preface: National Energy Information System

The National Energy Information System (NEIS) decision unit contains the operational elements of the Energy Information Administration (EIA), providing a comprehensive treatment of energy information, including gathering, interpretation, analysis, processing, auditing, and dissemination services. The NEIS is composed of six major elements. The Office of Oil and Gas and the Office of Coal, Nuclear, Electric and Alternate Fuels develop, operate, and maintain the statistical and analytical information systems necessary to collect, process, and interpret data and conduct forecasting and analysis activities in their respective fuel areas. On a reimbursable basis, both of these offices provide major contract and staff support to the Federal Energy Regulatory Commission (FERC) and the latter also supports the Office of Civilian Radioactive Waste Management. The Office of Energy Markets and End Use maintains statistical and analytical systems concerning energy consumption, and other subjects which cut across different energy sectors, including information on the international energy situation, economic and financial matters, and energy supply and demand balances. The Office of ADP Services provides computer processing support services for in-house and other DOE energy information programs and for FERC regulatory programs. The Office of Planning, Management, and Information Services includes the National Energy Information Center, EIA's "window to the world," which has responsibility for information dissemination. This division also performs editorial and graphics preparation and mailing list support for EIA information products. The Office of Statistical Standards provides coherent and credible strategies for use across EIA for information collection, analysis, and forecasting; develops processing, documentation, and archiving standards; provides data quality oversight; and manages the Department's energy information forms clearance process. Program direction provides funds for the salaries, benefits, and travel for NEIS staff.

II. A. Summary Table:

Oil and Gas

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Petroleum Supply Information	$ 5,242	$ 5,250	$ 5,633	+ 7
Petroleum Marketing Information	4,038	4,188	4,251	+ 2
Reserves and Natural Gas Information	3,906	3,947	4,250	+ 8
Total, Oil and Gas	$ 13,186	$ 13,385	$ 14,134	+ 6

Coal, Nuclear, Electric and Alternate Fuels

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Coal Information	$ 1,124	$ 1,147	$ 1,211	+ 6
Electric Power Information	2,306	2,532	2,752	+ 9
Nuclear Information	1,486	1,352	1,377	+ 2
Alternate Fuels Information	0	185	191	+ 3
Total, Coal, Nuclear, Electric and Alternate Fuels	$ 4,916	$ 5,216	$ 5,531	+ 6

Energy Markets and End Use

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Integrated and Economic Energy Information	$ 1,818	$ 1,901	$ 2,103	+ 11
Energy End Use	2,750	2,578	2,143	- 17
International and Contingency Information	670	741	589	- 21
Total, Energy Markets and End Use	$ 5,238	$ 5,220	$ 4,835	- 7

ADP Services

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
ADP Services	$ 6,653	$ 7,023	$ 7,383	+ 5
Total, ADP Services	$ 6,653	$ 7,023	$ 7,383	+ 5

Information Services

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Information Services	$ 650	$ 699	$ 748	+ 7
Total, Information Services	$ 650	$ 699	$ 748	+ 7

Statistical Standards

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Statistical Standards	$ 1,130	$ 1,185	$ 1,262	+ 6
Total, Statistical Standards	$ 1,130	$ 1,185	$ 1,262	+ 6

Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction	$ 21,025	$ 21,777	$ 22,834	+ 5
Total, Program Direction	$ 21,025	$ 21,777	$ 22,834	+ 5

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Oil and Gas			
Petroleum Supply Information	Collect and publish weekly, monthly, and annual petroleum supply statistics. Provide support to the Strategic Petroleum Reserve (SPR) Office on a reimbursable basis.	Continue FY 1989 program, with deferred maintenance of Integrated Petroleum System due to sequestration ($203K).	Continue FY 1990 program with restoration of system maintenance reduced by FY 1990 sequestration Inflation: +180 Program Change: -0-
	$ 5,242	$ 5,250	$ 5,633
Petroleum Marketing Information	Collect and publish monthly and annual data concerning crude oil and petroleum product sales and prices. Integrate all petroleum marketing data into a single unified database. Continue State heating oil program without subsidies.	Continue activities at the FY 1989 level.	Continue FY 1990 program. Decrease due to a programmatic transfer of the Crude Oil Petroleum System to the Reserves and Natural Gas Division. Inflation:+138 Program Change:-75
	$ 4,038	$ 4,188	$ 4,251
Reserves and Natural Gas Information	Produce annual data series on reserves and production of crude oil, natural gas, and natural gas liquids and monthly and annual reports on natural gas supplies, disposition, and prices. Produce analysis and forecasts of oil and gas reserves, production and natural gas markets. Provide support to the Federal Energy Regulatory Commission (FERC) on a reimbursable basis.	Continue activities at the FY 1989 level, with diminished efforts in natural gas analysis due to the sequestration ($94K).	Continue activities at the FY 1990 level, with restoration of natural gas analysis reduced by the FY 1990 sequestration. Increase due to a programmatic transfer of the Crude Oil Petroleum System from the Petroleum Marketing Division. Inflation:+134 Program Change:+75
	$ 3,906	$ 3,947	$ 4,250
Oil and Gas	$ 13,186	$ 13,385	$ 14,134

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Coal, Nuclear, Electric and Alternate Fuels			
Coal Information	Collect and analyze coal information and produce weekly, monthly, quarterly, and annual statistical reports. Maintain historical databases.	Continue activities at the FY 1989 level with reduction of contract support for publication effort due to the FY 1990 sequestration ($25K).	Continue activities at FY 1990 level and restore publications support reduced by the FY 1990 sequestration. Inflation:+39 Program Change:-0-
	$ 1,134	$ 1,147	$ 1,211
Electric Power Information	Produce monthly, quarterly, and annual statistical reports on all aspects of electric power. Maintain historical databases. Provide support to FERC on a reimbursable basis. Conduct analysis of operational and financial aspects of the electric power industry including cogeneration and imports.	Continue activities at a reduced level of effort due to the FY 1990 sequestration ($132K). Fund increases for continued development of nonutility power producers survey and the interutility electricity trade data base.	Continue activities at FY 1990 level with restoration of operating funds reduced by the FY 1990 sequestration. Inflation:+88 Program Change:-0-
	$ 2,306	$ 2,332	$ 2,552
Nuclear Information	Produce data concerning nuclear fuels for statistical reports and analyses. Fund the uranium viability assessment program. Support the Department's nuclear waste management activities.	Decrease nuclear analysis in order to transfer funds to Alternate Fuels Information for National Energy Strategy data development and analysis.	Continue activities at FY 1990 level with a small decrease to eliminate publication of Nuclear Power Construction Activity. Inflation:+45 Program Change:-20
	$ 1,406	$ 1,352	$ 1,377
Alternate Fuels Information	Maintain minimal awareness of activities in the alternate fuels area.	Increased data development, analysis and modeling in the renewable energy area in support of the National Energy Strategy.	Continue activities at the FY 1990 level. Inflation:+6 Program Change:-0-
	$ 0	$ 185	$ 191

III. Coal, Nuclear, Electric and Alternate Fuels (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
Coal, Nuclear, Electric and Alternate Fuels	$ 4,916	$ 5,216	$ 5,301

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Energy Markets and End Use			
Integrated and Economic Energy Information	Produce EIA's baseline energy forecasts. Prepare monthly and annual integrated energy statistical publications. Continue Financial Reporting System (FRS), State Energy Data System (SEDS), and State Energy Price and Expenditure Data System (SEPEDS). Provide contract support for preparation of the Monthly Energy Review and development of a national-level market analysis capability to respond to issues related to the Annual Energy Outlook.	Continue FY 1989 program with reductions to contractor support for the energy industry financial analysis, timesharing for macroeconomic studies, and development of demand models due to sequestration ($135). Fund development of a PC-based short-term energy forecasting model. Consolidate and use modeling efforts to better support the National Energy Strategy .	Continue FY 1990 program with restoration of contract support reduced by sequestration. Inflation:+67 Program Change:-0-
	$ 1,818	$ 1,901	$ 2,103
Energy End Use	Conduct the 1989 Commercial Buildings Energy Consumption Survey (CBECS). Perform ongoing quality maintenance activities for all end use surveys. Provide support on a reimbursable basis, to the Family Support Administration (FSA) for the Low Income Home Energy Assistance Program and to the Bureau of Census.	Conduct the Residential Energy Consumption Survey (RECS). Program decrease is attributed to the fact that RECS is less costly than CBECS to implement and analyze. Continue FSA and Census support.	Conduct the FY 1991 Manufacturing Energy Consumption Survey (MECS), the Residential Transportation Energy Consumption Survey (RTECS), and a frame update for the CBECS. Program decrease is attributed to the fact that these three activities are less costly than the FY 1990 RECS. Continue FSA and Census support. Inflation:+85 Program Change:-520
	$ 2,750	$ 2,578	$ 2,143

III. Energy Markets and End Use (Cont'd):

Program Activity	FY 1989	FY 1990	FY 1991
International and Contingency Information	Collect and publish information concerning international energy activities and monitor the energy situation. Provide contingency analysis to DOE, interagency committees, and the International Energy Agency. Restore funds for international analysis including establishment of an international electricity database, worldwide refinery analysis, energy supply and consumption in the market economies, and exports from centrally planned economies.	Continue basic program. Fund automation of EIA's responses to international energy questionnaires.	Continue basic program. Program decreases due to completion of automation and documentation of responses of international energy questionnaires funded in FY 1990 and elimination of demand model development for the Worldwide Transportation and Refining Model. Small program increase for environmental analysis on topics, such as global warming. Inflation:+25 Program Change:-177
	$ 670	$ 761	$ 609
Energy Markets and End Use	$ 5,258	$ 5,220	$ 4,885

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
ADP Services	Operate ADP facility. Provide computer services to FERC and other DOE offices on a reimbursable basis. Maintain publications automation. Fund replacement of older, inefficient telecommunications equipment, including terminals, printers, and modems.	Continue operation and maintenance of ADP facility at the FY 1989 level. Planned increase in the facilities management funding reduced due to the sequestration ($124K).	Continue operation and maintenance of ADP facility at the FY 1990 level with restoration of facilities management support reduced by FY 1990 sequestration. Inflation:+236 Program Change:-0-
	$ 6,653	$ 7,023	$ 7,383
ADP Services	$ 6,653	$ 7,023	$ 7,383

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Information Services	Respond to public inquiries through the National Energy Information Center (NEIC). Perform publishing support and dissemination activities for all EIA products. Provide microfilming and document indexing services.	Continue program at reduced level of effort due to sequestration ($26K). Research available technology for a new generation automated publishing system.	Continue program with funds from the FY 1990 sequestration restored. Inflation:+23 Program Change:-0-
	$ 650	$ 699	$ 748
Information Services	$ 650	$ 699	$ 748

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Statistical Standards	Develop standards for statistical integrity and monitor conformance with standards. Maintain Data Resources Directory (DRD). Fund independent expert reviews of major studies. Operate forms clearance and burden control program.	Continue FY 1989 program with some delays due to sequestration ($37K). Fund development of standardized software to process EIA's surveys.	Continue FY 1990 program with restoration of programs delayed by FY 1990 sequestration. Inflation:+40 Program Change:-0-
	$ 1,130	$ 1,185	$ 1,262
Statistical Standards	$ 1,130	$ 1,185	$ 1,262

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provide funds for salaries, benefits and travel for direct funded National Energy Information System Staff. Direct Funded: 417 FERC Funded: 15 OCRWM Funded: 3 Total of 432 excludes FTEs funded by OCRWM.	Continue FY 1989 activities. Direct Funded: 421 FERC Funded: 14 OCRWM Funded: 2 Total of 435 excludes FTEs funded by OCRWM.	Continue FY 1990 activities. Inflation:+1057 Program Change:-0- Direct Funded: 421 FERC Funded: 14 OCRWM Funded: 2 Total of 435 excludes FTEs funded by OCRWM.
	432.0 FTE $ 21,025	435.0 FTE $ 21,777	435.0 FTE $ 22,834
Program Direction	432.0 FTE $ 21,025	435.0 FTE $ 21,777	435.0 FTE $ 22,834

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

LEAD TABLE

Policy and Management

Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Base	FY 1991 Request	Program Change Request vs Base	
					Dollar	Percent
Program Support Operating Expenses	$ 179	$ 165	$ 165	$ 91	$ -74	-45%
Program Direction Operating Expenses	$ 9,879	$ 9,649	$ 9,649	$ 9,790	$ +141	+1%
TOTAL	$ 10,058	$ 9,814	$ 9,814	$ 9,881	$ +67	+1%
Summary Operating Expenses	$ 10,058	$ 9,814	$ 9,814	$ 9,881	$ +67	+1%
Total Program	$ 10,058	$ 9,814	$ 9,814	$ 9,881	$ +67	+1%
Staffing (FTE's)	30	31	31	31		

FY 1990 reflects final Gramm-Rudman-Hollings sequester adjustments and P.L. 101-164 reductions to fund anti-drug activities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION

(dollars in thousands)

SUMMARY OF CHANGE

POLICY AND MANAGEMENT

FY 1990 Adjusted Appropriation	$ 9,814
FY 1991 Base	$ 9,814
Restoration of FY 1990 Sequestration	+ 137
Inflation of Contractual Activities, Travel, and Training	+ 276
Salary and Benefit Pricing Adjustments	+ 63
FY 1991 Base Adjusted for Inflation	$10,290
Program Decreases:	
Administrative Management Information System	- 100
Administrative Overhead Costs	- 309
FY 1991 Congressional Request	$ 9,881

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(dollars in thousands)

KEY ACTIVITY SUMMARY

POLICY AND MANAGEMENT

I. Preface:

Policy and Management provides resources for the central management, guidance, and coordination of all EIA activities. The Administrator of EIA is supported by a Deputy Administrator and a planning, financial management, and administrative support staff. The support staff manages overall EIA program planning and evaluation, project control, budgeting, and procurement; performs organization and management analysis; and provides personnel management and logistical support services. The office also monitors and coordinates all General Accounting Office and Professional Audit Review Team activities, tracks legislation for energy information implications, prepares and coordinates congressional testimony, and handles the disclosure protection policy for sensitive company-submitted information. The office also provides funds to Department of Energy's Management and Administration for space rental, utilities, communications, supplies, and other support services.

II. A. Summary Table: Program Support

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Support	$ 179	$ 165	$ 91	- 45
Total, Program Support	$ 179	$ 165	$ 91	- 45

Program Direction

Program Activity	FY 1989 Actual	FY 1990 Estimate	FY 1991 Request	% Change
Program Direction	$ 9,879	$ 9,649	$ 9,790	+ 1
Total, Program Direction	$ 9,879	$ 9,649	$ 9,790	+ 1

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Support	Develop EIA annual and multi-year program and contract plans. Prepare budgets, related testimony and hearing materials. Execute budget. Process and monitor contract, personnel, and other administrative support actions. Operate and maintain an automated resource management tracking system.	Continue FY 1989 activities with delay in implementing planned improvements to the automated resource management system due to sequestration ($20K).	Continue FY 1990 efforts with a decrease due to reduced contract support requirements as a result of simplifying the automated resource management system. Inflation:+6 Program Change:-100
	$ 179	$ 165	$ 91
Program Support	$ 179	$ 165	$ 91

III. Activity Descriptions: (New BA in thousands of dollars)

Program Activity	FY 1989	FY 1990	FY 1991
Program Direction	Provide funds for salaries, benefits, and travel for Policy and Management staff; all EIA training; and administrative support for Dallas Field Office. Also funds administrative support provided by DOE Management and Administration for space rental, utilities, communications, supplies, and other support services.	Continue FY 1989 activities. Decreases are due to expected continued efficiencies in the administrative support area; such as telecommunications and other services, and is partially due to sequestration ($117K).	Continue FY 1990 activities. Decrease due to efficiencies in printing and telecommunications. Inflation:+333 Program Change:-309
	30.0 FTE $ 9,879	31.0 FTE $ 9,649	31.0 FTE $ 9,790
Program Direction	30.0 FTE $ 9,879	31.0 FTE $ 9,649	31.0 FTE $ 9,790

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
ENERGY INFORMATION ADMINISTRATION
(Obligations Dollars in Thousands)

OBJECT CLASS SUMMARY

Energy Information Administration

	FY 1989 Actual	FY 1990 Estimate	FY 1991 Estimate
Direct Funding:			
11.1 Full-time permanent.................	$18,841	$19,268	$20,194
11.3 Other than full-time permanent.....	787	804	842
11.5 Other personnel compensation.......	244	250	262
11.9 Total personnel compensation.......	$19,872	$20,322	$21,298
12.1 Personnel benefits, civilian.......	2,776	2,839	2,976
21.0 Travel and transportation of persons............................	214	253	261
22.0 Transportation of things...........	32	40	40
23.1 Rental payments to GSA.............	4,001	4,192	4,267
23.2 Rental payments to others	1,346	1,838	1,805
24.0 Printing and reproduction..........	913	1,128	1,009
25.0 Other services.....................	32,425	33,493	34,321
26.0 Supplies and materials.............	729	521	631
99.0 Subtotal Direct Obligations........	$62,308	$64,626	$66,608
Reimbursable...........................	6,623	6,768	6,879
Totals	$68,931	$71,394	$73,487

NON-DEFENSE CONSTRUCTION PROJECT DATA SHEETS

NAVAL PETROLEUM AND OIL SHALE RESERVES

DEPARTMENT OF ENERGY

FY 1991 CONGRESSIONAL BUDGET REQUEST

OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Kern County Rule 427 Compliance
Naval Petroleum Reserves Nos. 1&2
California

Total Estimated Cost (TEC) $9,910,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: Kern County Rule 427 Compliance

(b) **Total Estimated Cost**: $ 9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) **Operating Expenses** (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	0	0	1900	1900
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	1300	1300
6. Total Operating Expenses	0	0	0	3200	3200
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	0	0	3200	3200
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	0	0	3200	3200

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Kern County Rule 427 Compliance

(b) Total Estimated Cost: $9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	640	640	1340	1340	680	680
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	430	430	860	860	445	445
6. Total Operating Expenses	1070	1070	2200	2200	1125	1125
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	1070	1070	2200	2200	1125	1125
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	1070	1070	2200	2200	1125	1125

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Kern County Rule 427 Compliance

(b) Total Estimated Cost: $9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	695	695	705	705	5960
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	455	455	460	460	3950
6. Total Operating Expenses	1150	1150	1165	1165	9910
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	1150	1150	1165	1165	9910
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	1150	1150	1165	1165	9910

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Kern County Rule 427 Compliance

(b) Total Estimated Cost: $9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

On June 1, 1987, the Kern County Air Pollution Control Board (KCAPCB) adopted Rule 427 "Emissions From Stationary Internal Combustion Engines" which includes a "trigger" mechanism for the implementation of I.C. engine NOx controls in Western Kern County. This rule shall become effective in Western Kern County only upon a finding by the KCAPCB that four or more separate validated exceedances of the ozone National Ambient Air Quality Standards (NAAQS) of 0.12 ppm have occurred between January 1, 1988 and December 31, 1990. The following engines would be required to be modified within 15 months of this finding: (1) rich-burn engines greater than 200 hp would be required to achieve an 80% NOx reduction or 90 ppm by volume on a dry basis corrected to 15% exhaust oxygen; (2) lean-burn engines greater than 500 hp would be required to achieve a 70% NOx reduction or 150 ppm by volume on a dry basis corrected to 15% exhaust oxygen or 2 gm/bhp-hr for existing engines controlled exclusively by combustion modifications.

The remaining rich-burn and lean-burn engines greater than 50 hp would be required to achieve compliance with the above standards by December 31, 1995.

Preliminary data for calendar year 1988 indicates that four validated ozone exceedances have occurred. Based on this information, we anticipate the implementation of Kern County Rule 427 in FY 90. Replacement of internal combustion engines may be required within 15 months of the "trigger" if legislation does not allow the use of the "available offsets" approach.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	1st Qtr FY 90	1st Qtr FY 95
Order Equipment	2nd Qtr FY 90	2nd Qtr FY 95
Receive Equipment	3rd Qtr FY 90	3rd Qtr FY 95
Detailed Design	1st Qtr FY 90	3rd Qtr FY 90
Procure Construction Subcontractor	2nd Qtr FY 90	3rd Qtr FY 95
Construction	3rd Qtr FY 90	4th Qtr FY 95

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Kern County Rule 427 Compliance

(b) Total Estimated Cost: $9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(j) Management and Contracting Plan

Engineering, design, construction, cost controls, etc., will be primarily the management responsibility of the Unit Operator with broad oversight monitoring coordination to be given by the staff of the Owners (DOE and Chevron) and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements. Project is to conform in all respects to all laws, regulations, and other requirements governing occupational safety and health and protection of the environment.

(k) Prior Year Achievements - Not Applicable

(l) Current Year Achievements - Not Applicable

(m) Reasons for Increases or Decreases - Not Applicable

(n) Construction Cost Estimate

Cost/Schedule
($000)

	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
Cost Estimate	0	3200	1070	2200	1125	1150	1165

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Kern County Rule 427 Compliance

(b) Total Estimated Cost: $9,910,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards

This project will be in compliance with EPA.

(q) Evaluation of Flood Hazards

This project will be located in an area not subject to flooding determined in accordance with Executive Order.

(r) Compliance with the National Environmental Policy Act

This project is not located in a flood plain or wet land and will be in compliance with National Environmental Policy Act.

(s) Accessibility for the Handicapped - Not Applicable

DEPARTMENT OF ENERGY

FY 1991 CONGRESSIONAL BUDGET REQUEST

OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Produced Water Injection
Naval Petroleum Reserves Nos. 1&2
California

Total Estimated Cost (TEC) $10,900,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	800	800	1400	1400
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	575	575	1200	1200
6. Total Operating Expenses	0	1375	1375	2600	2600
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	1375	1375	2600	2600
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	1375	1375	2600	2600
(t) Associated Remedial Work (Fund 111)	0	0	0	0	0
(u) Associated Drilling Activities (Fund 112)	0	0	0	0	0

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	855	855	1320	1320	790	790
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	695	695	990	990	730	730
6. Total Operating Expenses	1550	1550	2310	2310	1520	1520
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	1550	1550	2310	2310	1520	1520
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	1550	1550	2300	2300	1520	1520
(t) Associated Remedial Work (Fund 111)	0	0	0	0	0	0
(u) Associated Drilling Activities (Fund 112)	0	0	0	0	0	0

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate B/A	FY 94 Estimate B/O	FY 95 Estimate B/A	FY 95 Estimate B/O	Total Cost B/A
1. Design and Construction	915	915	0	0	6080
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	630	630	0	0	4820
6. Total Operating Expenses	1545	1545	0	0	10900
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	1545	1545	0	0	10900
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	1545	1545	0	0	10900
(t) Associated Remedial Work (Fund 111)	0	0	0	0	0
(u) Associated Drilling Activities (Fund 112)	0	0	0	0	0

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

Produced water (water associated with oil production) has reached significant quantities at NPR #1, presently a total of 100,000 BWPD at two locations: 18G and 24Z. We propose to eliminate duplicate handling of water by selectively replacing Tulare water injection with produced water. This will:

- Achieve operating cost savings.
- Defer expansion of the Tulare water supply system currently operating at maximum capacity.
- Defer expansion of the water disposal system, currently operating at near maximum capacity.

Adequate quantities of produced water are now available to isolate portions of the waterflood system and convert them to produced water. This will offer operating cost savings and relieve environmental concerns regarding water disposal into Tulare zone. Surface facilities required for the injection of produced water will be provided. These facilities will include produced water lines, water treatment facilities, and other surface facilities. Work is currently planned in the following sequence:

FY 89: Convert 24Z and NWR Stevens Waterflood to produced water.

FY 90: Convert SE leg of 33S Plant to Stevens produced water and repair/replace 18G/24Z waste water pipeline.

FY 91: Upgrade 50Z water for waterflood injection.

FY 92: Install waste water gathering system and water knockout at 10 tank settings.

FY 93: Install water knockout at 10 tank settings.

(a) Project Title: Produced Water Injection

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification (con't)

FY 94: Water knockout at 10 tank settings.

Since this project benefits all zones which produce water, costs will be allocated to each producing zone in proportion to its waste water production.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	4th Qtr FY 89	1st Qtr FY 90
Order Equipment	2nd Qtr FY 90	2nd Qtr FY 90
Receive Equipment	2nd Qtr FY 90	3rd Qtr FY 90
Detailed Design	1st Qtr FY 90	2nd Qtr FY 90
Procure Construction Subcontractor	2nd Qtr FY 90	3rd Qtr FY 90
Construction	3rd Qtr FY 90	4th Qtr FY 90

NOTE: This schedule will be repeated each fiscal year through 1994 in an orderly expansion of the system using lump sum bidding procedures with the subcontractor furnishing material and labor where possible.

(j) Management and Contracting Plan

Engineering, design, construction, cost controls, etc., will be primarily the management responsibility of the Unit Operator with broad oversight monitoring coordination to be given by the staff of the Owners (DOE and Chevron) and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements. Project is to conform in all respects to all laws, regulations, and other requirements governing occupational safety and health and protection of the environment.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Produced Water Injection

(b) Total Estimated Cost: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(k) Prior Year Achievements - Not Applicable

(l) Current Year Achievements

Alternative study prepared by Unit Operator.

(m) Reasons for Increases or Decreases

This is a newly anticipated project based on expected environmental constraints.

(n) Construction Cost Estimate

Design and Construction	$ 6,080,000
Equipment	$ 4,820,000
	$10,900,000

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards

This project is anticipated in order to meet expected governmental requirements regarding waste water disposal.

(q) Evaluation of Flood Hazards

This project will be located in an area not subject to flooding determined in accordance with Executive Order 11988.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: Produced Water Injection

(b) **Total Estimated Cost**: $10,900,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(r) **Compliance with the National Environmental Policy Act**

This project is not located in a flood plain or wet land and will be in compliance with National Environmental Policy Act.

(s) **Accessibility for the Handicapped** - Not Applicable

DEPARTMENT OF ENERGY

FY 1991 CONGRESSIONAL BUDGET REQUEST

OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Compressor Optimzation Implementation Naval Petroleum Reserves Nos. 1&2 California	Total Estimated Cost (TEC) $13,933,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: Compressor Optimization Implementation

(b) **Total Estimated Cost**: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) **Operating Expenses** (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	723	723	2000	2000
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	0	723	723	2000	2000
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	723	723	2000	2000
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	723	723	2000	2000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: Compressor Optimization Implementation

(b) **Total Estimated Cost**: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) **Operating Expenses** (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	2140	2140	2200	2200	2250	2250
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0	0
6. Total Operating Expenses	2140	2140	2200	2200	2250	2250
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	2140	2140	2200	2200	2250	2250
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	2140	2140	2200	2200	2250	2250

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Compressor Optimization Implementation

(b) Total Estimated Cost: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	2290	2290	2330	2330	13,933
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	2290	2290	2330	2330	13,933
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	2290	2290	2330	2330	13,933
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	2290	2290	2330	2330	13,933

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Compressor Optimization Implementation

(b) Total Estimated Cost: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

Gas production is forecasted to increase in the future. This project is to implement the recommendations of the Compressor Optimization Implementation Study funded in FY 87 and completed in FY 88. Also, as production strategies change from year to year, this project will generate specific sub-projects to handle the changing production. Each year in October, a new five year gas production forecast is released by the Unit Operator. This project, using a computer model of the various gas gathering systems at NPR-1, will recommend and fund separate AFE's to handle the changing gas production. Typically, these projects are installing new gas gathering pipelines, recylindering and/or relocating existing compressors, installing new compressors, and placing abandoned pipelines in gas gathering service.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	1st Qtr FY 89	4th Qtr FY 95
Order Equipment	1st Qtr FY 89	4th Qtr FY 95
Receive Equipment	1st Qtr FY 89	4th Qtr FY 95
Detailed Design	1st Qtr FY 89	4th Qtr FY 95
Procure Construction Subcontractor	1st Qtr FY 89	4th Qtr FY 95
Construction	1st Qtr FY 89	4th Qtr FY 95

(j) Management and Contracting

Engineering, design, construction, cost control, etc. will be primarily the management responsibility of the Unit Operator with broad oversight coordination by the staff of the Owners and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements governing occupational safety and health and protection of the environment.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Compressor Optimization

(b) Total Estimated Cost: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(k) Prior Year Achievements

Compressor Optimization Study FY 88, purchase 2000 HP of leased compression FY 88.

(l) Current Year Achievements

AFE's for placing abandoned HP pipelines in LP service approved and in progress. AFE's approved to install facilities to bypass excess gas lift gas to HP approved.

(m) Reasons for Increases or Decreases

Project expanded to 1995.

(n) Construction Cost Estimate

Design	$ 1,339,000
Procurement	$ 6,297,000
Construction	$ 6,297,000
	$13,933,000

(o) Incorporation of Fallout Shelters - Not Applicable.

(p) Federal Compliance with Pollution Control Standards

This project will be in compliance with EPA.

(q) Evaluation of Flood Hazards - Not Applicable

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Compressor Optimization

(b) Total Estimated Cost: $13,933,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(r) Compliance with the National Environmental Policy Act

This project will be in compliance with EPA.

(s) Accessibility for the Handicapped - Not Applicable

DEPARTMENT OF ENERGY

FY 1991 CONGRESSIONAL BUDGET REQUEST

OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Stevens Tank Setting Modifications Naval Petroleum Reserves Nos. 1&2 California	Total Estimated Cost (TEC) $7,065,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	300	300	700	700
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	160	160	300	300
6. Total Operating Expenses	0	460	460	1000	1000
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	460	460	1000	1000
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	460	460	1000	1000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

		FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
		B/A	B/O	B/A	B/O	B/A	B/O
1.	Design and Construction	750	750	770	770	785	785
2.	R&D Related to Construction	0	0	0	0	0	0
3.	Facility Operations	0	0	0	0	0	0
4.	Direct Project Related Support Costs	0	0	0	0	0	0
5.	Capital Equipment	320	320	330	330	340	340
6.	Total Operating Expenses	1070	1070	1100	1100	1125	1125
(d)	Other DOE Funding	0	0	0	0	0	0
(e)	Total DOE Funding	1070	1070	1100	1100	1125	1125
(f)	Non-DOE Funding	0	0	0	0	0	0
(g)	Total Project Funding	1070	1070	1100	1100	1125	1125

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	800	800	815	815	4920
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	345	345	350	350	2145
6. Total Operating Expenses	1145	1145	1165	1165	7065
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	1145	1145	1165	1165	7065
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	1145	1145	1165	1165	7065

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

1. Description

This project provides for modifications to increase existing tank setting capacities. The modifications will include increasing the liquid and/or gas capacities of test separators, pool separators, scrubbers and transfer pumps, as well as interconnecting piping and instrumentation.

2. Objective and Justification

The necessary modifications should be made to tank settings to provide capacity to meet production requirements. These modifications will benefit the MBB/W31S Sands, 26R Sands, 31S N/A Shales, 29R/24Z Shales, and the 24Z Pools in the Stevens Zone.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	1st Qtr FY 90	1st Qtr FY 90
Detailed Design	2nd Qtr FY 90	2nd Qtr FY 90
Construction	3rd Qtr FY 90	4th Qtr FY 90

NOTE: Above cycle to be repeated each fiscal year FY 90 through FY 95.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(j) Management and Contracting Plan

Engineering, design, construction, cost controls, etc., will be primarily the management responsibility of the Unit Operator with broad oversight monitoring coordination to be given by the staff of the Owners (DOE and Chevron) and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements. Project is to conform in all respects to all laws, regulations, and other requirements governing occupational safety and health and protection of the environment.

(k) Prior Year Achievements - Not Applicable

(l) Current Year Achievements - Not Applicable

(m) Reasons for Increases or Decreases - Not Applicable

(n) Construction Cost Estimate

Cost/Schedule
($000)

	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
Cost Estimate	460	1000	1070	1100	1125	1145	1165

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Stevens Tank Setting Modifications

(b) Total Estimated Cost: $7,065,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards

This project will be in compliance with EPA.

(q) Evaluation of Flood Hazards

This project will be located in an area not subject to flooding determined in accordance with Executive Order 11988.

(r) Compliance with the National Environmental Policy Act

This project is not located in a flood plain or wet land and will be in compliance with National Environmental Policy Act.

(s) Accessibility for the Handicapped - Not Applicable

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Pipeline Repair/Gas Replacement - Gas
Naval Petroleum Reserves Nos. 1&2
California

Total Estimated Cost (TEC) $24,111,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
(c) Operating Expenses (DOE)					
1. Design and Construction	0	201	201	2840	2840
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	0	201	201	2840	2840
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	201	201	2840	2840
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	201	201	2840	2840

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	3640	3640	5060	5060	4050	4050
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0	0
6. Total Operating Expenses	3640	3640	5060	5060	4050	4050
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	3640	3640	5060	5060	4050	4050
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	3640	3640	5060	5060	4050	4050

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	4120	4120	4200	4200	24111
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	4120	4120	4200	4200	24111
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	4120	4120	4200	4200	24111
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	4120	4120	4200	4200	24111

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

This project is to repair/replace defective pipeline segments discovered by the ongoing corrosion inspection program (nondestructive testing). This project will involve multiple AFE's.

These AFE projects are necessary to maintain production and operations and comply with applicable local, state and federal codes and recommended practices which govern gas gathering and distribution systems.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	1st Qtr FY 91	4th Qtr FY 91
Order Equipment	1st Qtr FY 91	4th Qtr FY 91
Receive Equipment	1st Qtr FY 91	4th Qtr FY 91
Detailed Design	1st Qtr FY 91	4th Qtr FY 91
Procure Construction Subcontractor	1st Qtr FY 91	4th Qtr FY 91
Construction	1st Qtr FY 91	4th Qtr FY 91

(j) Management and Contracting Plan

Engineering, design, construction, cost control, etc. will be primarily the management responsibility of the Unit Operator with broad oversight coordination by the staff of the Owners and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements governing occupational safety and health and protection of the environment.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(k) Prior Year Achievements - Not Applicable

(l) Current Year Achievements - Not Applicable

(m) Reasons for Increases or Decreases - Not Applicable

(n) Construction Cost Estimate

Design	$ 1,619,000
Procurement	$10,364,000
Construction	$12,128,000
	$24,111,000

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards

This project will be in compliance with EPA.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Gas

(b) Total Estimated Cost: $24,111,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(q) Evaluation of Flood Hazards - Not Applicable

(r) Compliance with the National Environmental Policy Act

This project is not located in a flood plain or wet land and will be in compliance with National Environmental Policy Act.

(s) Accessibility for the Handicapped - Not Applicable

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
OPERATING EXPENSE FUNDED PROJECT DATA SHEET

Pipeline Repair/Replacement - Oil and Water Naval Petroleum Reserves Nos. 1&2 California	Total Estimated Cost (TEC) $15,350,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Oil and Water

(b) Total Estimated Cost: $15,350,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	0	0	2000	2000
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	0	0	0	2000	2000
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	0	0	2000	2000
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	0	0	2000	2000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Oil and Water

(b) Total Estimated Cost: $15,350,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	2460	2460	2640	2640	2700	2700
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0	0
6. Total Operating Expenses	2460	2460	2640	2640	2700	2700
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	2460	2460	2640	2640	2700	2700
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	2460	2460	2640	2640	2700	2700

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Oil and Water

(b) Total Estimated Cost: $15,350,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	2750	2750	2800	2800	15350
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	0
6. Total Operating Expenses	2750	2750	2800	2800	15350
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	2750	2750	2800	2800	15350
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	2750	2750	2800	2800	15350

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Oil and Water

(b) Total Estimated Cost: $15,350,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

This project is to repair/replace defective pipeline segments discovered by the ongoing corrosion inspection program (nondestructive testing). This project will involve multiple AFE's.

These AFE projects are necessary to maintain production and operations and comply with applicable local, state and federal codes and recommended practices which govern gathering and distribution systems.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	1st Qtr FY 91	4th Qtr FY 91
Order Equipment	1st Qtr FY 91	4th Qtr FY 91
Receive Equipment	1st Qtr FY 91	4th Qtr FY 91
Detailed Design	1st Qtr FY 91	4th Qtr FY 91
Procure Construction Subcontractor	1st Qtr FY 91	4th Qtr FY 91
Construction	1st Qtr FY 91	4th Qtr FY 91

(j) Management and Contracting Plan

Engineering, design, construction, cost control, etc. will be primarily the management responsibility of the Unit Operator with broad oversight coordination by the staff of the Owners and direction by DOE. Contracting and purchasing arrangements have not been finalized, but will probably be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements governing occupational safety and health and protection of the environment.

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: Pipeline Repair/Replacement - Oil and Water

(b) Total Estimated Cost: $15,350,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(k) Prior Year Achievements - Not Applicable

(l) Current Year Achievements - Not Applicable

(m) Reasons for Increases or Decreases - Not Applicable

(n) Construction Cost Estimate

Design	$921,000
Procurement	$6,753,000
Construction	$7,676,000
	$15,350,000

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards

This project will be in compliance with EPA.

DEPARTMENT OF ENERGY

FY 1991 CONGRESSIONAL BUDGET REQUEST

OPERATING EXPENSE FUNDED PROJECT DATA SHEET

35R Gas Plant Upgrade
Naval Petroleum Reserves Nos. 1&2
California

Total Estimated Cost (TEC) $6,140,000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: 35R Gas Plant Upgrade

(b) Total Estimated Cost: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	Cumulative Prior Years Obligations	FY 89 Actuals B/A	FY 89 Actuals B/O	FY 90 Estimate B/A	FY 90 Estimate B/O
1. Design and Construction	0	50	50	400	400
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	600	600
6. Total Operating Expenses	0	50	50	1000	1000
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	50	50	1000	1000
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	50	50	1000	1000

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: 35R Gas Plant Upgrade

(b) Total Estimated Cost: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) Operating Expenses (DOE)

	FY 91 Estimate		FY 92 Estimate		FY 93 Estimate	
	B/A	B/O	B/A	B/O	B/A	B/O
1. Design and Construction	1070	1070	1475	1475	0	0
2. R&D Related to Construction	0	0	0	0	0	0
3. Facility Operations	0	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0	0
5. Capital Equipment	1070	1070	1475	1475	0	0
6. Total Operating Expenses	2140	2140	2950	2950	0	0
(d) Other DOE Funding	0	0	0	0	0	0
(e) Total DOE Funding	2140	2140	2950	2950	0	0
(f) Non-DOE Funding	0	0	0	0	0	0
(g) Total Project Funding	2140	2140	2950	2950	0	0

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: 35R Gas Plant Upgrade

(b) **Total Estimated Cost**: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(c) **Operating Expenses** (DOE)

	FY 94 Estimate		FY 95 Estimate		Total Cost
	B/A	B/O	B/A	B/O	B/A
1. Design and Construction	0	0	0	0	2995
2. R&D Related to Construction	0	0	0	0	0
3. Facility Operations	0	0	0	0	0
4. Direct Project Related Support Costs	0	0	0	0	0
5. Capital Equipment	0	0	0	0	3145
6. Total Operating Expenses	0	0	0	0	6140
(d) Other DOE Funding	0	0	0	0	0
(e) Total DOE Funding	0	0	0	0	6140
(f) Non-DOE Funding	0	0	0	0	0
(g) Total Project Funding	0	0	0	0	6140

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: 35R Gas Plant Upgrade

(b) Total Estimated Cost: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(h) Description, Objective, and Justification

1. Description

Install facilities to lower the hydrocarbon and water dew points of the 35R Lean Oil Absorption Plant (LOAP) processed gas to provide gas of sales quality. Major units required would include a skid mounted refrigeration system, a gas to gas heat exchanger, a gas chiller, separator and a gas glycol dehydrator. Currently the 35R Plant residue gas must be injected because the hydrocarbon dew point of the gas does not meet sales gas specifications. Additionally, the water dew point may exceed sales gas specifications when plant throughput exceeds 70 MMSCFD. A study will be initiated in the 4th quarter of FY 89 pending receipt of specific scope items from the Owners.

2. Objective and Justification

At present the 35R LOAP residue gas is required for injection. The demand for injection is decreasing on the Reserve. It is projected that a minimum of 15 MMSCFD of LOAP residue gas will be available for sales by FY 92 and thereafter.

(i) Schedule of Planned Activities

Activity	Start	Complete
Commitment	4th Qtr FY 89	2nd Qtr FY 91
Detailed Design	2nd Qtr FY 90	2nd Qtr FY 91
Construction	1st Qtr FY 92	3rd Qtr FY 92

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) **Project Title**: 35R Gas Plant Upgrade

(b) **Total Estimated Cost**: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(j) **Management and Contracting Plan**

Engineering, design, construction, cost and schedule controls, etc., will be primarily the management responsibility of the Unit Operator with broad oversight monitoring by the staff of the Owners (DOE and Chevron) and direction by DOE. Contracting and purchasing arrangements will be fixed price subcontract awarded on the basis of competitive bidding. Quality control will be in accordance with all agency quality control requirements. Project is to conform in all respects to all laws, codes, regulations, and other requirements governing occupational safety and health protection.

(k) **Prior Year Achievements** - Not Applicable

(l) **Current Year Achievements** - Not Applicable

(m) **Reasons for Increases or Decreases** - Not Applicable

(n) **Construction Cost Estimate**

Cost/Schedule
($000)

	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95
Cost Estimate	50	1000	2140	2950	0	0	0

OPERATING EXPENSES FUNDED
PROJECT DATA SHEET

(a) Project Title: 35R Gas Plant Upgrade

(b) Total Estimated Cost: $6,140,000
(Tabular dollar in thousands. Narrative material in whole dollars.)

(o) Incorporation of Fallout Shelters - Not Applicable

(p) Federal Compliance with Pollution Control Standards - Not Applicable

(q) Evaluation of Flood Hazards

This project will be located in an area not subject to flooding determined in accordance with Executive Order 11988.(r) Compliance with the National Environmental Policy Act

This project is not located in a flood plain or wet land and will be in compliance with National Environmental Policy Act.

(s) Accessibility for the Handicapped - Not Applicable

NON-DEFENSE CONSTRUCTION PROJECT DATA SHEETS

FOSSIL ENERGY RESEARCH AND DEVELOPMENT

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DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

Fossil Energy Activities - Plant and Capital Equipment

(Tabular dollars in thousands. Narrative material in whole dollars.)

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1. Title and location of project: Program Support Facility Renovation
Pittsburgh Energy Technology Center (PETC)
Pittsburgh, PA

2. Project No. 89-F-103

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3. Date A-E work initiated: Second Quarter FY 1988

3a. Date physical construction starts: Second Quarter FY 1990

4. Date construction ends: Third Quarter FY 1992

5. Previous cost
Estimate: $6,300
Date: 05/88

6. Current total estimated cost (TEC): $ 8,691[a]
Date: 05/89

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7. Financial Schedule:

Fiscal Year	Authorizations	Appropriations	Obligations	Costs
1988	0	0	250[b]	250[b]
1989	1,250	1,250	995	0
1990	2,961	2,961	3,216	2,730
1991	689	689	689	1,826
1992	3,541	3,541	3,541	2,292
1993				1,593

[a] Increase of $2,391 from previous cost estimate respresents additional third floor office area, brick exterior with foundations, additional support area for conference center and added emergency power and distribution. The increase is based on a completed Title I Architective and Engineering Report dated November, 1988.

[b] General Plant Project Funds under construction Project No. GP-F100 in the amount of $250K was used for A&E work to modify the Chemical Engineering Laboratories at PETC.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

1. Title and location of project: Program Support Facility Renovation
Pittsburgh Energy Technology Center (PETC)
Pittsburgh, PA

2. Project No. 89-F-103

8. Brief Physical Description of Project:

This project proposes to develop an existing building into a total Program Support Facility. The project will entail developing approximately 59,350 square feet of unused interior space, as well as, upgrading the building's exterior envelope and adjacent site into a fully integrated Program Support Facility. Interior renovations will convert existing space to needed administration offices, cafeteria, and conference center. This project would complete the full occupancy and utilization of the Program Support Facility. This will achieve the recommended goals in the PETC Site Utilization Plan.

9. Purpose, Justification of Need For, and Scope of Project:

The Program Support Building is a pre-engineered metal building designed and erected in 1975 as a Process Building for the now defunct Synthoil liquefaction plant. The Synthoil Plant located at PETC was never completely constructed due to changes in U.S. Government policy for developing alternative fuel sources. However, a number of buildings were erected and process piping installed. The Program Support Building was one of the structures completely erected. The building was left vacant in 1980, then progressively developed internally to house the National Coal Data Center and the PETC Central Computer Facility. These facilities occupy 56 percent of the building space. The remaining 44 percent of the space is unused and undeveloped. This unused area is proposed to be fully developed and occupied, thus completing the 100 percent occupancy and utilization of the Program Support Facility.

The unused and vacant area in the Program Support Facility must be developed to utilize present empty space; secure office space for the Project Management Group, which must now compete with other groups in the Research and Development Center; complete the final phase of the Program Support Facility as an identifiable, unified, integral site; and complete construction of a PETC Facility Conference Center.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

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1. Title and location of project: Program Support Facility Renovation
Pittsburgh Energy Technology Center (PETC)
Pittsburgh, PA

2. Project No. 89-F-103

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10. Details of Total Estimated Costs:

	Item	Total
A. Architectural and engineering design and general project services during construction: @ approximately 12% of construction cost		$ 720
(1) Title I Engineering (completed November 1988)	$ 45	
(2) Title II Engineering	500	
(3) Title III Engineering	175	
B. Construction costs:		
Demolition, Site Improvements, New Construction and Equipment		6,240
SUBTOTAL		$6,960
Contingency @ approximately 15% of Total of (a) and (b)		1,040
TOTAL ESTIMATED COST (TEC)		$8,000
Escalation to Mid Point of Construction		$8,691

11. Method of Performance:

Contract arrangements are as follows:

A. Design: Fixed-price contract awarded after public announcement and board evaluation, to A-E firm with demonstrated competence and professional qualification.
B. Construction: Fixed-price contract awarded to competent firm on the basis of the public competitive bidding process.
C. Title III Inspection Services: By the Architect-Engineer firm, under surveillance of DOE personnel, the Contracting Officer's Representative (COR) and the Contracting Officer's Technical Representative (COTR).

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1. Title and location of project: Program Support Facility Renovation
Pittsburgh Energy Technology Center (PETC)
Pittsburgh, PA

2. Project No. 89-F-103

12. Funding Schedule of Project Funding and Other Related Funding Requirements:

Note: 1. This item is not required for this project.
2. Item 12 is not required in accordance with DOE Budget Process Orders - 5100 Series since there are no significant "other direct project costs" nor any exceptionally large "other related costs."

13. Narrative Explanation of Total Project Funding and Other Related Funding Requirements:

Note: 1. This item is not required for this project.
2. Item 13 is not required in accordance with DOE Budget Process Orders - 5100 Series since there are no significant "other direct project costs" nor any exceptionally large "other related costs."

14. Incorporation of Fallout Shelters:

The facility to be constructed as a part of this project is not suitable for use as a fallout shelter because the primary building shell and foundation do not require modification. Therefore, the provision for fallout shelters here is not applicable.

15. Federal Compliance with Pollution Control Standards:

The total cost of this project includes the costs for those measures necessary to assure compliance with Executive Order 12088. Sanitary waste will be discharged into existing sewers connected to adequate sewage treatment facilities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

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1. Title and location of project: Program Support Facility Renovation
Pittsburgh Energy Technology Center (PETC)
Pittsburgh, PA

2. Project No. 89-F-103

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16. Evaluation of Flood Hazards:

This project will be located in an area not subject to flooding determined in accordance with Executive Order 11988. Potential hazards to PETC real property at the site of the proposed facility due to flooding are nonexistent, since Lick Run, the nearest watercourse, runs along PETC's eastern boundary at an elevation 95 feet below the physical facilities.

17. Compliance with the National Environmental Policy Act, Floodplains/Wetlands Environmental Review Requirements, and Other Related Environmental Statutes:

Planning for compliance with the National Policy Act, DOE 5440.1B, the Council on Environmental Quality Regulation (40 SFR 1500-1508), DOE's NEPA guidelines (45 CFR 20694, as amended), DOE's regulation 10 CFR 1022, and other related statutes including but not limited to the Clean Air Act and the Clean Water Act has been performed during the preliminary design and engineering phase (Title I) of the project; no NEPA documents have been started to date. Pertinent information, as it is developed during the preliminary design phase, will be provided for headquarters use in determining the need for further documentation for those actions that may require headquarters determinations. The proposed project is not located in a floodplain/wetland. Neither the National Historical Preservation Act, nor the Endangered Species Act are applicable to the proposed project.

18. Accessibility for the Handicapped:

The project will be accessible to the physically handicapped in accordance with the Architectural Barriers Act, Public Law 90-480, and implementing instructions in the Federal Property Management Regulations (41 CFS 101-91.6), and applicable provisions of DOE Order 6430.1, General Design Criteria Manual, and all current amendments pertaining thereto at that point in time during both the design and construction of the proposed facilities.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

Fossil Energy Activities - Plant and Capital Equipment

(Tabular dollars in thousands. Narrative material in whole dollars.)

1. Title and location of project: General plant projects for Energy Technology Centers

2. Project No. GP-F100

3. Date A-E work initiated: Various

3a. Date physical construction starts: FY 1991

4. Date construction ends: Various

5. Previous cost estimate: None
Date:

6. Current cost estimate: $ 433
Less amount for PE&D: None
New cost estimate: $ 433
Date: 12/89

7. Financial Schedule:

Fiscal Year	Authorizations	Appropriations	Obligations	Costs
Prior[1/2/3/4]	29,470	29,470	29,470	27,751
1989	1,750	1,750	1,750	1,204
1990	1,777	1,777	1,777	1,120
1991	433	433	433	1,894
1992 and after				1,461

1/ Includes $78.7K reprogrammed from General Purpose Facilities Projects 76-01-B and 76-01-C to General Plant Project 79-0060 in FY 1983.

2/ Includes $63.6K reprogrammed from General Purpose Facilities Project 77-01-B to General Plant Project 82-F-505 in FY 1984.

3/ Includes $161.3K reprogrammed from General Purpose Facilities Projects 76-01-A, 76-01-B, and 76-01-C to General Plant Project 82-F-505 in FY 1985.

4/ Includes $175K reprogrammed from operating funds in FY 1987.

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1. Title and location of project: General plant projects for Energy Technology Centers

2. Project No.: GP-F100

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7. Financial Schedule: (Continued)

Fiscal Year	Obligations	Costs FY 1989	 FY 1990	 FY 1991	 FY 1992 & After
1987	1,925	0	0	0	0
1988	2,250	1,204	515	0	0
1989	1,750	0	605	1,145	0
1990	1 777	0	0	629	1,148
1991	433	0	0	120	313
		1,204	1,120	1,894	1,461

8. Brief Physical Description of Project:

These funds provide for capital construction items which are not of sufficient magnitude to warrant line-item budgetary consideration, yet are essential to the safe, efficient operation of the Energy Technology Centers. These funds are dedicated to a number of improvements, alterations, and additions that include, but are not limited to, OSHA and DOE health and safety requirements; security enhancement; building demolition; perimeter fencing; roadway upgrading; and other renovation of facilities to provide for efficient and, particularly, safe use of existing space.

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEETS

1. Title and location of project: General plant projects for Energy Technology Centers

2. Project No.: GP-F100

9. Purpose, Justification of Need for, and Scope of Project:

General plant projects are a continuing requirement to maintain safe and efficient operating conditions, and to accommodate new program developments. Such changes in technical program requirements frequently result in the need for alterations or minor construction of items not previously anticipated.

General plant projects are necessary to meet requirements of property control and protection, to upgrade certain facilities to meet health, fire protection, and safety criteria, and to meet changing center mission requirements.

10. Details of Cost Estimate:

	Total Cost
a. Engineering, design, and inspection at about 10% of construction costs	33
b. Construction costs	334
c. Contingency at approximately 18% of above costs	66
Total estimated costs:	433

11. Method of Performance:

Design will be accomplished on the basis of negotiated fixed fee contracts to the extent possible. Procurement and construction will be accomplished by fixed price contracts awarded on the basis of competitive bids.

12. Funding Schedule of Project Funding and Other Related Funding Requirements:

Not applicable.

1. Title and location of project: General plant projects for Energy Technology Centers   2. Project No. GP-F100

13. Narrative Explanation of Total Project Funding and Other Related Funding Requirements:

Not applicable.

14. Incorporation of Fallout Shelters:

Items to be constructed as part of this project are not suitable for use as fallout shelters.

15. Federal Compliance with Pollution Control Standards:

The total cost of the project where applicable includes costs of those measures necessary to assure compliance with Executive Order 11752.

16. Evaluation of Flood Hazards:

Items to be constructed as part of this project will be located in an area not subject to flooding determined in accordance with Executive Order 11988.

17. Compliance with the National Environmental Policy Act, Floodplains/Wetlands Environmental Review Requirements, and Other Related Environmental Statutes:

Items to be constructed as part of this project will be in compliance with the National Environmental Policy Act and other applicable related statutes and will not be located in a floodplain/wetland.

18. Accessibility for the Handicapped:

Items to be constructed as part of this project will be accessible to the handicapped in accordance with the Architectural Barriers Act, P.L. 90-840, and implementing instructions in the Federal Property Management Regulations (41 CFR 101-91.6).

NON-DEFENSE CONSTRUCTION PROJECT DATA SHEETS

ENERGY CONSERVATION

DEPARTMENT OF ENERGY
FY 1991 CONGRESSIONAL BUDGET REQUEST
CONSTRUCTION PROJECT DATA SHEET
CONSERVATION AND RENEWABLE ENERGY - PLANT AND CAPITAL EQUIPMENT
ENERGY CONSERVATION

(Tabular dollars in thousands. Narrative material in whole dollars.)

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

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3. Date A-E work initiated: 1st Quarter FY 1988

3a. Date physical construction starts: 4th Quarter FY 1988

4. Date construction ends: 4th Quarter FY 1992

5. Previous cost estimate: $19,800
Date: 11/88

6. Current cost estimate: $21,600
Date: 12/89

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7. Financial Schedule:

Fiscal Year	Authorization	Appropriations	Obligations	Costs
1987	$ 300	$ 300	$ 300	$ 0
1988	4,500	4,500	4,500	1,100
1989	0	0	0	3,200
1990	0	0	0	500
1991	4,000	4,000	4,000	3,900
After 1991 *	0	0	0	100

This revised data sheet reforecasts authorizations, appropriations, obligations and costs; and increases the TEC from $19.8M to $21.6M. These changes are the result of a zero appropriation in FY 1990 and the consequential extension of schedule for project completion. The document reflects the completed design and detailed A&E cost estimates.

* Only includes cost from funds appropriated in prior years.

1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

8. Brief Physical Description of Project

Phase II of the Combustion Research Facility (CRF) will add approximately 32,300 gross square feet to the existing 51,100 square-foot multibuilding facility at Sandia National Laboratories, Livermore (SNLL). Phase II will add 21,200 square feet to the existing 16,400 square-foot laboratory building and 1,100 square feet to the existing 25,000 square-foot office building. The project will include such site modifications and improvements as yard paving, walkways, landscaping, fencing, signage, east entrance road relocation, and parking lot rearrangement and refurbishment.

The laboratory building addition will be an L-shaped extension to the south and east of the existing building. Construction of the addition will match the existing building in architectural style, materials, and finishes, color, and floor-to-floor heights. The structure of the building will be steel framed with precast exterior concrete shear walls (insulated), slab-on-grade floors designed for dampening and vibration isolation, steel-framed louver enclosed mechanical loft above the laboratories with metal and concrete deck (insulated), and a loft roof consisting of built-up roofing on metal decking. The laboratory building addition will provide sixteen new laboratory spaces and two facility laser laboratories. The new facility laser rooms will be connected to serve any Lab in the facility, via the Laser Duct and Periscope System. Laboratory spaces of varied sizes are planned to provide optimum flexibility of spaces as required to operate the various experiments intended for this Facility. Partitions around most laboratories will be floor-to-loft deck metal stud with gypsum board, designed for sound attenuation. Partitions around three high-bay laboratories will be poured-in-place concrete extending from the floor up through the loft deck to the loft roof above. Free-standing acoustical partitions along the main corridor will enclose some work spaces, accommodating remote data acquisition and control equipment outside the laboratories. All interior walls will be painted. Floors throughout the laboratory spaces, laboratory work areas, and corridors will be finished with resilient floor tile, while the floors in the main entry vestibule will be finished with carpet tile. Suspended acoustical ceilings will be provided except in high-bay laboratories. Once-through conditioned ventilation will be provided from existing building fans for existing and new laboratory spaces to carry of fuel gases or vapors and products of combustion, with systems included to minimize the discharge of contaminants to the atmosphere. An electronic safety monitoring and control system will provide back-up to the ventilation system.

Recirculated conditioned ventilation will be provided from a new fan system to the corridor and work spaces outside the laboratories in both the existing and new addition. The existing system of ducts used for diagnostic

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

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laser beam transmission from the central laser rooms will be extended to all new laboratories. Other existing building systems such as power distribution, lighting, communications, security alarms, fire and evacuation alarms, automatic fire sprinkler, and piping and plumbing will also be extended to the addition.

*Note: The 3,000 square-foot laboratory annex building planned in the original data sheet has been combined into the laboratory building addition, increasing its size to 21,200 gross square feet.

The office building addition will provide space for thirty-four new offices, an open office secretarial and file area, computer terminal rooms, and conference rooms. The addition will be a two-story wing added to the north of the existing office building and will match it in architectural style, materials and finishes, color, and floor-to-floor height. It will consist of a steel-framed structure with metal panel curtain walls, slab-on-grade floors at the ground level, second floor cellular metal decking with concrete fill, and an insulated metal deck roof with built-up roofing. It will also include an exterior emergency exit stairwell, solar insulated glass at the exterior windows, metal stud with painted gypsum board interior partitions, free-standing acoustical partitioning around open office areas, suspended acoustical ceilings, and carpet-tiled floors. The existing building main stairwell will be modified to accommodate the increased traffic due to added office space. Roof-mounted air handling equipment will provide heating, ventilating, and air conditioning. An automatic sprinkler system, general and emergency lighting, electrical power distribution, communication systems, intrusion alarms, and fire and evacuation alarms will be provided.

Design of the existing mechanical building allowed space for the expansion of some services. Included in this project will be an additional chiller, pumps, and heat exchangers. Additional fan equipment providing recirculated conditioned air for the laboratory building and its addition will be in the loft space above the laboratory buildings. An additional electrical substation and process-cooling water system will also be provided.

Existing site utilities such as domestic and fire protection water, sanitary sewer, natural gas, site lighting, and electrical power and special systems will be modified and extended to service the additional facilities.

A key feature of the Combustion Research Facility is the availability of specially designed lasers for optical agnostics. The Facility lasers developed in Phase I will continue to be used, and will be supplemented by two new Facility lasers: a high-power pulsed, high-repetition rate tunable ultraviolet laser (UV) and a subpicosecond

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

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laser capability. The laser beam directing system will be extended so that the existing and new laboratories have the capability of receiving the beam from any of the Facility lasers.

Other equipment includes a gas-chromatograph-mass spectrometer, infrared, visible, and ultraviolet spectrometers, elemental analyzers, optical signal processing equipment, and fast laser image processing devices.

Existing equipment from current facilities at SNLL will be relocated to eleven of the new labs, although some of these experiments will be modified some equipment will be upgraded. Five labs will be furnished with new equipment.

9. Purpose, Justification of Need for, and Scope of Project

This project will add vitally needed capacity and important new capabilities to the Combustion Research Facility at Sandia National Laboratories, Livermore, California. The principal objective of this construction is to provide combustion research resources that can adequately deal with the critical needs of the 1990s. To accomplish this goal requires the addition of a new laboratory wing that emphasizes centralized next-generation laser diagnostic facilities and specially designed laboratories not available in CRF Phase I.

The overall scope of this project is the doubling of space available for experiments. Equipment funds are required for a new central laser system and special purpose laboratory equipment. A modest enlargement of the office building is included to house the rapidly increasing population of visiting scientists. These enhancements will consolidate the combustion-related resources at a single site readily accessible to visiting scientists.

The current capabilities of the facility, including the unique lasers DIANA and SIRIUS, and VAX computer have allowed significant contributions to combustion sciences along with attracting users from industry and universities. These users are now transferring this technology to their home institutions. Meanwhile, there is a continuing need for the CRF to advance combustion technology to a higher level. The improvements included in the Phase II project will address this need. For example, special lasers and equipment will be developed to provide the ability to measure whole images--instead of points--to a finer level of detail, with better resolution, and far more speed than is now possible. It is this type of advance in the science of combustion that will allow the pursuit of the increasingly more difficult and complex problems of the 90s only now becoming apparent.

CONSTRUCTION PROJECT DATA SHEETS

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

The normal increase in both the quantity and sophistication of combustion research by Sandia staff, together with the heightened requirements of visiting scientists, have completely saturated the facilities provided under Phase I of the Combustion Research Facility. Also, as expected, a growing recognition of the importance of combustion science and diagnostics development to the DOE has created demands on the existing Facility which require the implementation of Phase II.

The implementation of Phase II will make available a new class of lasers. Recent advances in laser technology demonstrate that changes in capability are now possible in two different directions. Phase II will include a specially designed high repetition rate laser system. This laser will be optimized for laser photochemistry combustion research and high speed planar imaging of transient combustion phenomena. The other laser system will be designed to study combustion phenomena occurring on extremely short time scales (subpicosecond time scales). The new laser systems will enable significant extension of our knowledge in a broad range of topics in fundamental combustion science.

Many important experiments cannot be carried out in the existing plant because of a lack of space. Often, access to the unique capabilities of the CRF (such as the Facility lasers and computer) is essential for studying trade-offs between combustion efficiency and the pollution that results from existing and alternative fuels. However, much of the combustion research and diagnostics development work at Sandia is currently being done in facilities that are widely scattered throughout SNLL and therefore do not have access to these unique capabilities. Furthermore, some of these facilities are within Sandia's secure area, thus making it extremely difficult and awkward to provide access for uncleared visiting scientists. Significantly, all of the combustion materials efforts are located outside the CRF. Additional laboratories will permit the consolidation of these experiments at the CRF, thus providing the necessary access to the unique capabilities at the Facility. It will also provide adequate space and ready access to visiting scientists.

Operating experience has shown that many experiments require laboratories larger than those currently available in the Facility. As the research emphasis evolves from studies of simple basic flames and major chemical species toward work with more complex, realistic flames and with minor species and pollutants, the experiments necessarily become increasingly complex and require larger working spaces. The addition of the sixteen larger test laboratories included in Phase II of the Combustion Research Facility will satisfy these requirements.

1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

The number of offices required to support visiting researchers and staff must also be increased. Though additions to the resident staff have been few, each year of operation brings a large number of requests from qualified researchers to do work here. Furthermore, as experiments become more complex, researchers must often stay longer. Also, operating experience has shown that the visitor load is not uniform; that is, some visitors are here immediately before or after short courses and during the summer.

An increase in operating funds during Phase II construction is planned to acquire Class VI computing capacity, which is urgently required by CRF staff and visiting scientists. This is being pursued in compliance with the recommendations of our DOE sponsors, as well as the recommendations of our external review committee. Class VI computing access is required for detailed theoretical studies, as well as computer modeling and adequately addressing combustion phenomena.

Impact if Not Approved

This addition is crucial to continuation of the lead role the CRF now plays in developing, improving, and applying advanced research methods for combustion science. As a result of successful technology transfer from the CRF to visiting scientists, there has been a significant advance in the research methods practiced by the combustion community. Given the increasingly difficult challenges faced in the use of fuel resources, the CRF mission must continue to emphasize advancing the frontiers of combustion science.

Without Phase II the technology at the CRF will stagnate, and opportunities for important new scientific research will be missed. The major advances in lasers and computers will not be brought to bear on pressing problems, nor made available to combustion researchers and designers in this country. CRF Phase II is also crucial to the success of programs in combustion research and diagnostics development. Currently, progress is hampered by the fractionation of the research effort. A significant amount of the experimental activities are housed in other buildings without direct access to the Facility lasers and other resources. Some of the activities are in security areas where it is difficult or impossible for uncleared visiting researchers to work. Moreover, the major portion of the diagnostics research is housed in a converted warehouse; it is essential that this activity be moved to an area that provides cleaner air, better temperature control, improved safety, access to the Facility lasers, and unrestricted availability to users.

CONSTRUCTION PROJECT DATA SHEETS

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

Finally, without the Phase II addition to the Facility, the size of the visiting scientist (user) program will have to be curtailed, due to the saturation of laboratory and office space. As a result, the ability for the combustion community to move on to more complex, yet realistically important research topics, will be constrained.

10. Details of Cost Estimate

	Unit Cost	Item Cost	Total Cost
a. Engineering, design, and inspection (ED&I)............................			2,120
(1) ED&I at approximately 14% of construction..........................		1,820	
(2) Project Management..		300	
b. Construction costs..			11,800
(1) Improvements to land including paving, walkways, landscaping, fencing, sinage, road relocation, parking lot rearrangement..		1,000	
(2) Buildings..		10,000	
(a) Office building (11,100 SF $162/SF)...........................	1,800		
(b) Laboratory building (21,200 SF $368/SF).......................	7,800		
(c) Mechanical building (Existing).................................	500		
(3) Utilities, including water, sanitary sewer, natural gas, site lighting, electrical power, and signal systems..........		700	
c. Standard equipment including lasers, spectrometers, analyzers, processing equipment...			5,900
d. Removal less salvage..			0
Subtotal.......................			$ 19,820
e. Contingency at approximately 9% of above cost.........................			1,780
Total estimated costs..........			$ 21,600

CONSTRUCTION PROJECT DATA SHEETS

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

The above estimates have been made by the SNLL Facilities Engineering Staff and are based on the Title II Cost Estimate of October 1988 prepared by the project Architect-Engineer, Jacobs Engineering Group Inc. of Martinez, California.

ED&I costs for Title I and II reflect negotiated contract fees. ED&I for Title III is based on a negotiated fee plus an allowance for an extended period of construction, and for escalation. Construction costs and equipment costs have been escalated to mid points of construction and equipment procurement and installation. Escalation rates are in agreement with the DOE Price Change Index dated August 1989.

Contingency at 9% is judged to be adequate for the remainder of the project. 3.4 Million of construction will be completed in FY 1990. Design is complete for the balance of the construction work.

11. Method of Performance

Engineering, design, and inspection will be performed under negotiated architect and engineer contracts. Construction, procurement of equipment, and occupancy will be accomplished by fixed price contracts awarded on the basis of competitive bidding.

12. Funding Schedule of Project Funding and Other Related Funding Requirements

	Prior Years	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992
a. Total project costs							
1. Total facility costs							
(a) Construction line item	$ 0	0	1,100	3,200	500	3,900	100
2. Other project costs							
(a) Conceptual design costs	161	59	0	0	0	0	0
Total project costs (Items 1 and 2)	$ 161	$ 59	$ 1,100	$ 3,200	$ 500	$ 3,900	$ 100

CONSTRUCTION PROJECT DATA SHEETS

1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

b. Other related annual costs (estimated life of project: 50 years)

1.	Facility operating costs	$ 300
2.	Programmatic operating expenses directly related to the facility	2,400
3.	Capital equipment not related to construction but related to the programmatic effort in the facility	400
4.	Maintenance, repair, GPP or other construction related to programmatic effort in the facility	200
5.	Other costs	0
	Total related annual costs	$ 3,300

13. Narrative Explanation of Total Project Funding and Other Related Funding Requirements

a. Total project funding
  1. Other project costs
    (a) Conceptual design costs - $220 of operating funds have been paid to architect-engineering firms for preparation of conceptual designs/conceptual design reports and supplemental information for this project.

b. Total related funding requirements
  1. Facility operating costs - This cost represents the annual operating expenses for utilities, maintenance, and janitorial service incurred due to the increase of 32,300 gross square feet in laboratory and office space.
  2. Programmatic operating expenses directly related to the facility - Staff increase resulting from this project is estimated to be six people. Costs also include acquisition of Class VI computer resources that will serve both resident staff and visiting scientists.
  3. Capital equipment not related to construction but related to the programmatic effort in the facility - The increase in annual capital equipment is estimated at $400,000. This is in addition to capital equipment funds currently allocated to the CRF.

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1. Title and location of project: Combustion Research Facility, Phase II
Sandia National Laboratories
Livermore, California

2. Project No. 87-R405

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4. Maintenance, repair, GPP or other construction related to programmatic effort - The annual GPP needs for Phase II are expected to be approximately $200,000. This is in addition to GPP funds presently allocated to the CRF.
5. Other costs - No other costs are anticipated.

14. Incorporation of Fallout Shelters in Future Federal Buildings

The above-ground structures will be either of relatively lightweight materials or the space will be accommodating experiments of such a hazardous or sensitive nature as to preclude their use for fallout protection.

15. Federal Compliance with Pollution Control Standards

The total estimated cost includes measures necessary to assure compliance with Executive Order 12088 Sanitary waste will be discharged into existing sewers connected to adequate sewage treatment facilities.

16. Evaluation of Flood Hazards

This project will be located in an area not subject to flooding, as determined in accordance with Executive Order 11988.

17. Compliance with the National Environmental Policy Act, Floodplains and/or Wetlands Environmental Review Requirements, and other Related Environmental Statues

The proposed facilities are not located in a floodplain or wetland. An Action Description Memorandum for this project was submitted to the Albuquerque Operations Office, and accepted by Mr. A. L. Gonzales by memo dated June 16, 1987.

18. Accessibility for the Handicapped

The proposed facility will be accessible to the handicapped in accordance with the Architectural Barrier Act, P.L. 90-480, and implementing instructions in the Federal Property Management Regulation (41 CFR 101-91.6).

NON-DEFENSE CONSTRUCTION PROJECT DATA SHEETS

STRATEGIC PETROLEUM RESERVE

DEPARTMENT OF ENERGY
1991 CONGRESSIONAL BUDGET REQUEST
OPERATING EXPENSE FUNDED PROJECT DATA SHEET
FOSSIL ENERGY

Distribution Enhancement Projects
Strategic Petroleum Reserve Program

Bryan Mound Drawdown Enhancements Oak Ridge Operations Office	Total Estimated Cost (TEC) $18,409,000 (Requirements for Sustained Drawdown of 1.25 Million Barrels Per Day (MMB/D) at Bryan Mound, Texas)

Requirements for Sustained Drawdown (1.25 MMBPD) Bryan Mound, TX
Oak Ridge Operations Office

Total Estimated Cost (TEC)
$18,409,000

(Tabular Dollars in Thousands. Narrative Material in Whole Dollars)

	Cumulative Prior Years		FY 1989		FY 1990		FY 1991		TOTAL	
	B/A	B/O	B/A	B/O	B/A	B/O	B/A	B/O	B/A	B/O
Design and Construction	$3,595	$500	$4,107	$2,425	$10,707	$ 6,774	$ 0	$8,705	$18,409	$18,409
Capital Improvement	750	500	1,225	500	0	975	0	0	1,975	1,975
Distribution Enhancement	2,845	0	2,882	1,925	10,707	5,804	0	8,705	16,434	16,434
R&D Related to Construction	0	0	0	0	0	0	0	0	0	0
Facility Operations	0	0	0	0	0	0	0	0	0	0
Direct Project Related Support Cost	0	0	0	0	0	0	0	0	0	0
Capital Equipment	0	0	0	0	0	0	0	0	0	0
Total Operating Expenses	$3,595	$500	$4,107	$2,425	$10,707	$ 6,774	$ 0	$8,705	$18,409	$18,409
Other DOE Funding	0	0	0	0	0	0	0	0	0	0
Total DOE Funding	$3,595	500	$4,107	$2,425	$10,707	$ 6,774	0	8,705	$18,409	$18,409
Non-DOE Funding	0	0	0	0	0	0	0	0	0	0
Total Project Funding	$3,595	$500	$4,107	$2,425	$10,707	$ 6,774	$ 0	$8,705	$18,409	$18,409

Requirements for Sustained Drawdown (1.25 MMBPD) Bryan Mound, TX
Oak Ridge Operations Office

Total Estimated Cost (TEC)
$18,409,000

(Tabular Dollars in Thousands. Narrative Material in Whole Dollars)

Description, Objective and Justification

This project provides for an increased sustained drawdown capability at the Bryan Mound site from one million one hundred thousand barrels per day (1,100 MBD) to one million two hundred and fifty thousand barrels per day (1,250 MBD). This will allow for increased distribution from the Seaway Group.

The proposed modifications are based on achieving a sustained (i.e., average) drawdown flow rate of one million two hundred and fifty thousand barrels per day (1,250 MBD) over the duration of the drawdown until 90% of the inventory has been withdrawn.

This distribution enhancement project was added in 1987 to reduce the requirements and costs of commercial marine distribution services in the Texoma Group as well as to provide a better system balance of drawdown capabilities among Strategic Petroleum Reserve sites.

The modifications to the present drawdown system for increasing the Bryan Mound drawdown capability are 1) upgrading the existing Raw Water Intake and Injection systems, 2) the integration of the existing site oil tanks for use in a surge capacity for drawdown, 3) modifications to cavern oil header piping and 4) the addition of a crude oil meter in the present system.

(a) Schedule of Planned Activities

Activity	Start	Complete
Design	3Q FY 1988	2Q FY 1989
Long Lead Equipment (LLE) Procurement	1Q FY 1989	4Q FY 1989
Other Procurement	3Q FY 1989	3Q FY 1990
Construction	1Q FY 1990	3Q FY 1991

Total Estimated Cost (TEC)
$18,409,000

(Tabular Dollars in Thousands. Narrative Material in Whole Dollars)

(b) Management and Contracting

The Management, Operating and Maintenance (MOM) contractor will conduct the Title I conceptual design work and Title II review with DOE oversight. An Architect/Engineer will perform the Title II detail design, Title III support, and administration of the construction contract. The general contractor will perform all construction and related work for the project. Long lead equipment will be competitively procured.

(c) Prior Year Achievements

- Conceptual Design was completed March 1988
- Detailed Design (Title II) was completed March 1989
- A raw water pipeline construction contract was awarded in March 1989 and completed in November 1989.
- GFE Pumps and Pipes have been procured.

d) CY Achievements

Pending resolution of an award protest to GAO, the site modification contract will commence in December 1989 with a scheduled completion date of April 1991.

(e) Reasons for Increases and Decreases

The TEC for this project was previously estimated at $10,206,000. The reason for the increase is that the previous estimate was based on a conceptual design report and the current estimate is based on final design packages and a fixed-price contract bid.

(f) Cost Estimate

	Item Cost	Total Cost
(1) Engineering, Design & Inspection (17.5% of Construction Costs)		$ 2,466
(2) Construction Costs		
(a) GFE Pumps & Pipes	$ 1,716	
(b) Pipeline Construction	678	
(c) Site Modification	$10,917	
(d) Terminal Surge Protection System	800	
		$14,111
(3) Contingency (Approx. 11% of Project Cost)		1,832
(4) Total Estimated Cost		$18.409

Requirements for Sustained Drawdown (1.25 MMBPD) Bryan Mound, TX
Oak Ridge Operations Office

Total Estimated Cost (TEC)
$18,409,000

(Tabular Dollars in Thousands, Narrative Material in Whole Dollars)

Incorporation of Fallout Shelters in Future Federal Buildings

This project does not include the construction of new buildings or building additions; therefore, the provisions for fallout shelters are not applicable.

Incorporation of Measures for the Prevention, Control and Abatement of Environmental Pollution at Federal Facilities

As presently conceived, operation of this project will not generate any air or water pollutants; therefore, the requirements of Executive Order 11752 do not pertain.

Evaluation of Flood Hazards

The Enhancement Project is to be performed in an already designated flood area in accordance with Executive Order 11988 and the Strategic Petroleum Reserve Design Level III criteria. Design assessment of the activities involved will cause minimal impact to the existing facilities.

Compliance with the National Environmental Policy Act and Related Statutes

Both the Seaway Group and Phase III Development Environmental Impact Statement (EIS) addressed construction and operational impacts of attaining design 1,100 MBD drawdown rates. The Seaway Complex Distribution Enhancements Environmental Assessment addressed additional construction to support drawdown requirements. The increase to 1,250 MBD from 1,100 MBD is afforded by the distribution enhancement pipeline. Minimal impact will occur in intake structure modification to meet a planned 1,250 MBD rate. It appears that the project will clearly not leave any significant environmental impacts; appropriate documentation will be prepared.

Accomodations for Handicapped Persons

By its nature this project is not subject to the Architectural Barriers Act, Public Law 90-480, or implementing instructions in the Federal Management Regulations (41 CRF 101.19.6).

DEPARTMENT OF ENERGY
1991 CONGRESSIONAL BUDGET REQUEST
OPERATING EXPENSE FUNDED PROJECT DATA SHEET
FOSSIL ENERGY

Distribution Enhancement Projects
Strategic Petroleum Reserve Program

Texoma Marine Distribution Enhancements
Oak Ridge Operations Office

Total Estimated Cost (TEC) $46,443,000
(For Marine Distribution Services Contracts
and Associated Pipeline Construction)

Texoma Marine Distribution Enhancements
Oak Ridge Operations Office

Total Estimated Cost (TEC)
$46,443,000

Tabular Dollars in Thousands	Cumulative Prior Years B/A	Cumulative Prior Years B/O	FY 1991 B/A	FY 1991 B/O	FY 1992 B/A	FY 1992 B/O	FY 1993 B/A	FY 1993 B/O	TOTAL B/A	TOTAL B/O
DOE Operating Expense Funding										
Design & Construction	8,560	0	13,226	0	24,757	7,818	0	38,618	46,443	46,443
Marine Distribution Services	8,560	0	13,226	0	2,318	0	0	24,104	24,104	24,104
Distribution Pipeline(s)	0	0	0	0	22,337	7,818	0	14,514	22,339	22.339
R&D Related to Construction	0	0	0	0	0	0	0	0	0	0
Facility Operations	0	0	0	0	0	0	0	0	0	0
Direct Project Related Support Cost	0	0	0	0	0	0	0	0	0	0
Capital Equipment	0	0	0	0	0	0	0	0	0	0
Total Operating Expense	8,560	0	13,226	0	24,757	7,818	0	38,618	46,443	46,443
Non DOE Funding	0	0	0	0	0	0	0	0	0	0
Total Project Funding	8,560	0	13,226	0	24,757	7,818	0	38,618	46,443	46,443

Description, Objective and Justification

The Strategic Petroleum Reserve (SPR) is comprised of six (6) crude oil storage sites located in the gulf coast area of Texas and Louisiana and connected by DOE-owned pipelines to terminals for drawdown and distribution of oil via ships and commercial pipelines. One terminal at St. James, Louisiana, is DOE-owned; the others are privately owned.

In accordance with the Energy Policy and Conservation Act (EPCA) of 1975 and the approved SPR Plan, the SPR will have the capability to store 750 million barrels of crude oil when completed in Fiscal Year 1992, and must have a drawdown/distribution capability of 4.5 million barrels per day. In light of numerous changes having taken place in the private sector in the early 1980's, the Department of Energy performed a comprehensive distribution study of the SPR in 1984 which revealed that the SPR's distribution capability would be limited to 2.3 million barrels per day if no distribution enhancements were made.

Texoma Marine Distribution Enhancements
Oak Ridge Operations Office

Total Estimated Cost (TEC)
$46,443,000

The SPR initiated a distribution enhancement program in 1984 and, to date, enhancements which have been completed or initiated will provide the SPR with a 4.0 million barrel per day distribution capability. Currently planned or proposed enhancements, including this project, will allow the SPR to achieve its planned 4.5-million-barrel-per-day drawdown/distribution capability.

Under this project, the SPR's Texoma System will acquire 600,000 barrels per day of marine distribution capability at one or more existing commercial marine terminals capable of providing the required terminalling services with minimal or no modifications. The competitive procurement of terminalling services will include, as separate bid items, the design and construction of pipelines connecting the SPR with the commercial terminals.

(a) Schedule of Planned Activities

The following table presents the total program broken down by primary tasks.

Activity	Start	Complete
Terminals:		
Procurement (RFP)	2Q FY 1990	1Q FY 1991
Terminal Modifications	2Q FY 1991	4Q FY 1993
Pipelines:		
Environmental Assessment	1Q FY 1991	3Q FY 1991
Design	1Q FY 1991	1Q FY 1992
Acquire Rights-of Way	4Q FY 1991	1Q FY 1993
Construction	2Q FY 1992	4Q FY 1993

(b) Management and Contracting

The SPR's physical distribution system is based on a policy to make maximum use of existing commercial distribution facilities during a petroleum disruption rather than constructing facilities exclusively for the SPR. Therefore, the SPR's business management approach for increasing the Texoma marine distribution capability is to competitively procure for marine terminal distribution services from one or more existing commercial marine terminals within the Beaumont/Port Arthur/Lake Charles area. Realizing most of these terminals are currently designed for unloading crude only, the distribution enhancement program is authorized to fund incidental terminal modifications to provide the capability to receive and outload SPR crude. Terminal enhancement designs will be subject to DOE approval and terminal payment will be subject to DOE certification & demonstration.

The competitive RFP for terminal services will include construction of pipelines connecting the terminals to the SPR as separate bid items. If pipeline bids are not acceptable, once marine terminal distribution service contracts are in place, DOE will design and construct interconnecting distribution pipelines to the terminal facilities to deliver SPR crude oil. In this case, acquisition of pipeline right-of-ways will be accomplished by the U.S. Army Corps of Engineers; pipeline design will be accomplished by an SPR A/E; and LLE procurement and construction will be accomplished by the competitive "Invitation-For-Bid" process.

(c) Prior Year Achievements

In May 1989, DOE issued a competitive procurement for commercial marine distribution services in the Beaumont/Port Arthur/Lake Charles areas.

In December 1989, DOE determined that cancellation of the subject procurement was necessary since the cost proposals exceeded the currently programmed budget authority for distribution enhancements.

(d) CY Achievements

In 1990, DOE plans to revise and reissue the procurement for commercial marine distribution services in the Texoma area.

(e) Reasons for Increases and Decreases

The TEC for this project has increased from the FY 1990 Congressional Budget Request to provide for the entire 600,000 B/D distribution capability and for additional escalation costs associated with the one year delay.

(f) Cost Estimate

The following cost estimate is based on conceptual design, for three marine terminal candidates in the Beaumont/Port Arthur area.

	Constant 1988 Dollars	Budget Year Dollars
1. Engrg, Design & Insp and Construction Mgmt (25% of construction costs)	6,218	7,145
2. Construction Costs		
(a) Terminal A Modifications	2,120	2,435
(b) Terminal A Pipeline Construction	4,870	5,596
(c) Terminal B Modifications	3,020	3,470
(d) Terminal B Pipeline Construction	3,664	4,210
(e) Terminal C Modifications	7,770	8,928
(f) Terminal C Pipeline Construction	3,430	3,941
3. Project Contingency (30% of Project Cost)	9,328	10,718
4. Total Estimated Cost	40,420	46,443

1/ Design and Construction of Terminal Modification will be accomplished by marine terminal owner.

2/ Design and Construction of Pipeline Interconnections will be accomplished by either marine terminal owner or Government contracting.